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Application Number 09/809,922

Filing Date March 16, 2001

First Named Inventor William L. Thomas

Art Unit 3714

Examiner Name Alex P. Rada

Attorney Docket Number ODS-38

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Incomplete Application☐ Response to Missing Parts
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Date April 19, 2007

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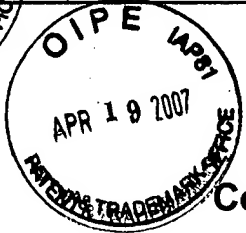
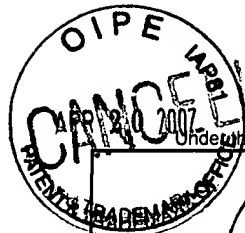
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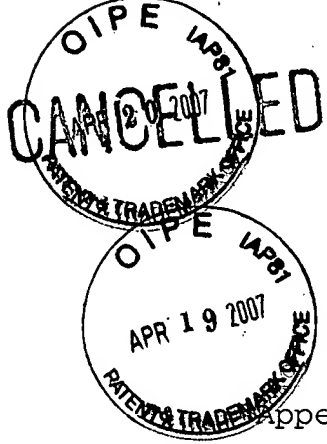
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PATENTS
Attorney Docket No. ODS-38

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Appellant : William L. Thomas
Application No. : 09/809,922 Confirmation No.: 7120
Filed : March 16, 2001
For : SYSTEMS AND METHODS FOR PRESENTING A
LOTTERY INTERFACE IN AN INTERACTIVE
WAGERING APPLICATION
Art Unit : 3714
Examiner : Alex P. Rada

New York, New York 10036
April 19, 2007

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AMENDED APPEAL BRIEF

Sir:

In response to the March 29, 2007 Notification of
Non-Compliant Appeal Brief, appellants are submitting this
Amended Appeal Brief pursuant to 37 C.F.R. § 41.37(d).
Pursuant to MPEP § 1205.03, this Amended Appeal Brief is a
complete new brief including the required corrections.

Appellants believe that no fee is required in
connection with this Amended Appeal Brief. However, the
Director is hereby authorized to charge any fees that may

be due, or credit any overpayment of the same, to Deposit Account No. 06-1075 (Order No. 003043-0038).

In view of the arguments and authorities set forth below, the Board should find the rejection of claims 1-32 to be in error, and the Board should reverse the rejection.

Appendices

This Brief has the following appendices:

Claims Appendix

Appendix A: Copy of claims 1-32 involved in this appeal;

Evidence Appendices

Appendix B: Copy of the Final Office Action dated April 19, 2006;

Appendix C: Copy of Schneier et al. U.S. Patent No. 6,402,614 (hereinafter "Schneier");

Appendix D: Copy of Archer U.S. Patent No. 6,277,026 (hereinafter "Archer");

Appendix E: Copy of Dickinson et al. G.B. Patent No. 2,147,773 (hereinafter "Dickinson");

Appendix F: Copy of Rittmaster U.S. Patent Publication No. 2002/0023010 (hereinafter "Rittmaster");

Appendix G: Copy of LottoBot, <http://lotobot.net> (hereinafter "LottoBot");

Appendix H: Copy of Luciano et al. U.S. Patent
No. 6,168,521
(hereinafter "Luciano");

Appendix I: Copy of SGI Insights, Scientific
Gaming International, vol. 1,
issue no. 5
(January 1999) (hereinafter "SGI
Insights");

Appendix J: Copy of McCollom et al. U.S.
Publication No. 2002/0010623
(hereinafter "McCollom"); and

Appendix K: Copy of Small U.S. Patent
No. 4,815,741 (hereinafter
"Small").

Related Proceedings Appendix

None.

(i.) Real Party in Interest

Appellant advises the Board that the real party in interest in the above-identified patent application is ODS Properties, Inc., a corporation organized and existing under the laws of the State of Delaware, and having an office and place of business at 6701 Center Drive West, Los Angeles, CA 90045, which is the assignee of this application.

(ii.) Related Appeals and Interferences

Appellant advises the Board that there are no other appeals or interferences known to appellant, his legal representative, or his assignee that will directly

affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(iii.) Status of Claims

Claims 1-32 are rejected in this application and are on appeal. Claims 33-84 have been cancelled.

(iv.) Status of Amendments

Appellant has not submitted any amendment pursuant to 37 C.F.R. § 1.116 or in reply to the April 19, 2006 Final Office Action (hereinafter "Final Office Action"), from which this appeal is being sought.

(v.) Summary of Claimed Subject Matter

Appellant's independent claims 1 and 11 are directed toward a method and a system for using an interactive wagering application to allow a user in a particular location to participate in lottery wagering using user equipment. The interactive wagering application determines the particular location of the user and provides a listing of lotteries in which the user may participate on a visual display based on the particular location of the user. The interactive wagering application provides the user with the ability to participate in at least one of the listed lotteries using the user equipment and issues an electronic lottery ticket for the lottery. The drawing for

the lottery takes place at a time subsequent to the issuance of the electronic lottery ticket.

Support in the specification for claims 1 and 11 is found at least in the locations indicated in the following table:

Claim 1	The Specification
A method for using an interactive wagering application to allow a user in a particular location to participate in lottery wagering using user equipment, comprising:	See, e.g., p. 1, ll. 13-17; p. 2, ll. 17-29.
determining the particular location of the user;	See, e.g., p. 19, ll. 14-22.
providing a listing of lotteries in which the user can participate on a visual display based on the particular location of the user;	See, e.g., p. 35, l. 20 through p. 36, l. 6.
giving the user the ability to participate in at least one of the lotteries using the user equipment; and	See, e.g., p. 2, ll. 17-22; p. 6, ll. 10-31.
issuing an electronic lottery ticket for the at least one of the lotteries, wherein a lottery drawing for the at least one of the lotteries will take place at a later time.	See, e.g., p. 2, l. 17 through p. 3, l. 5; p. 38, ll. 7-19; p. 42, l. 30 through p. 43, l. 24.
Claim 11	The Specification
An interactive wagering system for using an interactive wagering application to allow a user in a particular location to participate in lottery wagering using user television equipment, comprising user equipment configured to:	See, e.g., p. 1, ll. 13-17; p. 2, ll. 17-29.

determine the particular location of the user;	See, e.g., p. 19, ll. 14-22.
provide a listing of lotteries in which the user can participate on a visual display based on the particular location of the user;	See, e.g., p. 35, l. 20 through p. 36, l. 6.
give the user the ability to participate in at least one of the lotteries using the user television equipment; and	See, e.g., p. 2, ll. 17-22; p. 6, ll. 10-31.
issue an electronic lottery ticket for the at least one of the lotteries, wherein a lottery drawing for the at least one of the lotteries will take place at a later time.	See, e.g., p. 2, l. 17 through p. 3, l. 5; p. 38, ll. 7-19; p. 42, l. 30 through p. 43, l. 24.

Appellant's dependent claims 6 and 16 are directed toward a method and a system that records, in a multimedia format, lottery drawings associated with lotteries in which the user participated.

Support in the specification for claims 6 and 16 is found at least in the locations indicated in the following table:

Claim 6	The Specification
The method of claim 1 further comprising recording, in a multimedia format, the lottery drawings associated with the lotteries in which the user participated.	See, e.g., p. 2, ll. 30-32; p. 25, l. 3 through p. 26, l. 2.

Claim 16	The Specification
The system of claim 11 further comprising user equipment configured to record, in a multimedia format, the lottery drawings associated with the lotteries in which the user participated.	See, e.g., p. 2, ll. 30-32; p. 25, l. 3 through p. 26, l. 2.

Appellant's dependent claims 10 and 20 are directed toward a method and a system that creates a wager based on user inputs, gives the user the ability to finalize the wager at a later time, and then reminds the user to finalize the wager.

Support in the specification for claims 10 and 20 is found at least in the locations indicated in the following table:

Claim 10	The Specification
The method of claim 1 further comprising: creating a wager based on user inputs; giving the user the ability to finalize the wager at a later time; and reminding the user to finalize the wager.	See, e.g., p. 40, l. 13 through p. 42, l. 2; FIGS. 12 and 13.
Claim 20	The Specification
The system of claim 11 further comprising user equipment configured to: create a wager based on user inputs; give the user the ability to finalize the wager at a later time; and remind the user to finalize the wager.	See, e.g., p. 40, l. 13 through p. 42, l. 2; FIGS. 12 and 13.

Appellant's independent claims 21 and 27 are directed toward a method and a system for using an interactive wagering application to allow a user to automatically participate in a lottery using electronic user equipment. The user is given the ability to specify conditions via the user equipment, on which the interactive wagering application is at least partially implemented. The interactive wagering application automatically participates in the lottery on behalf of the user when the conditions are met. Further, the wagering application notifies the user of the user's automatic participation in the lottery.

Support in the specification for claims 21 and 27 is found at least in the locations indicated in the following table:

Claim 21	The Specification
A method for using an interactive wagering application to allow a user to participate in a lottery automatically using electronic user equipment, comprising:	See, e.g., p. 2, l. 17 through p. 3, l. 23.
giving the user the ability to specify conditions via the user equipment on which the interactive wagering application is at least partially implemented;	See, e.g., p. 39, l. 24 through p. 40, l. 12.
automatically participating in the lottery on behalf of the user when the conditions have been met; and	See, e.g., p. 39, l. 24 through p. 40, l. 12.

notifying the user of the automatic participation in the lottery.	See, e.g., p. 43, l. 10 through p. 44, l. 13; FIGS. 14A, 14B, and 15.
Claim 27	The Specification
A system for using an interactive wagering application to allow a user to participate in a lottery automatically comprising electronic user equipment configured to:	See, e.g., p. 2, l. 17 through p. 3, l. 23.
give the user the ability to specify conditions via the user equipment on which the interactive wagering application is at least partially implemented;	See, e.g., p. 39, l. 24 through p. 40, l. 12.
automatically participate in the lottery on behalf of the user when the conditions have been met; and	See, e.g., p. 39, l. 24 through p. 40, l. 12.
Notify the user of the automatic participation in the lottery.	See, e.g., p. 43, l. 10 through p. 44, l. 13; FIGS. 14A, 14B, and 15.

(vi.) Grounds of Rejection to be Reviewed on Appeal

The following ground of rejection is to be reviewed on this appeal:

Whether claims 1-6 and 11-16 are obvious under 35 U.S.C. § 103(a) over Schneier in view of Archer.

Whether claims 1 and 11 are obvious under 35 U.S.C. § 103(a) over Dickinson in view of Rittmaster in further view of Archer.

Whether claims 7, 9, 17, and 19 are obvious under 35 U.S.C. § 103(a) over Dickinson in view of Rittmaster and further in view of Lottobot.

Whether claims 8 and 18 are obvious under 35 U.S.C. § 103(a) over Dickinson in view of Rittmaster and Archer and further in view of SGI Insights.

Whether claims 6 and 16 are obvious under 35 U.S.C. § 103(a) over Dickinson in view of Rittmaster and Archer in further view of Luciano.

Whether claims 10 and 20 are obvious under 35 U.S.C. § 103(a) over Dickinson in view of Rittmaster and Archer in further view of McCollom.

Whether claims 21-32 are obvious under 35 U.S.C. § 103(a) over Walker in view of Archer in further view of Small.

(vii.) Argument

A. Rejection of Claims 1-6 and 11-16 under 35 U.S.C. § 103(a) over Schneier in view of Archer

In the Final Office Action, the Examiner rejected claims 1-6 and 11-16 under 35 U.S.C. § 103(a) as being obvious over Schneier in view of Archer. Appellant respectfully traverses this rejection and requests that it be overturned for at least the reasons set forth below.

Appellant's independent claims 1 and 11 are directed toward a method and a system for using an interactive wagering application to allow a user in a particular location to participate in lottery wagering

using user equipment. The interactive wagering application determines the particular location of the user and provides a listing of lotteries in which the user may participate on a visual display based on the particular location of the user. The interactive wagering application provides the user with the ability to participate in at least one of the listed lotteries using the user equipment and issues an electronic lottery ticket for the lottery. The drawing for the lottery takes place at a time subsequent to the issuance of the electronic lottery ticket.

Schneier refers to an off-line lottery system which enables players to purchase instant-type lottery game outcomes from a randomized prize data stream in a central computer. After the players purchase the instant-type lottery games having pre-determined outcomes, the user may "play" the lottery games by revealing the pre-determined outcome. A GPS receiver may determine the location of the player and may prevent the user from "playing" unless the player is in a location where such gaming is permitted.

Archer refers to a system for facilitating the purchase and sale of conventional lottery tickets online.

1. The Examiner's Rejection

The Examiner contends that Schneier refers to all of the elements of appellant's independent claims 1 and 11,

except "issuing an electronic lottery ticket for the at least one of the lotteries, wherein a lottery drawing for the at least one of the lotteries will take place at a later time." In an attempt to remedy this deficiency, the Examiner purports to combine Schneier with Archer.

2. Appellant's Response to the Rejection

The Examiner has failed to establish a prima facie case of obviousness

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally the prior art reference (or references when combined) must teach or suggest all of the claim limitations. See MPEP 2143; see also *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Appellant submits that the Examiner has failed to establish a *prima facie* case of obviousness and that this rejection is therefore insufficient as a matter of law. First, the Examiner has failed to point out any suitable suggestion or motivation to combine Schneier and Archer. Second, there cannot exist a suggestion or motivation to

combine Schneier with Archer in the manner suggested by the Examiner at least because Schneier teaches away from such a combination.

- a. The Examiner failed to present a suitable suggestion or motivation to combine Schneier and Archer

Appellant submits that the Examiner has failed to fulfill the requirement of presenting an "objective teaching . . . or . . . knowledge generally available to one of ordinary skill in the art that would lead that individual to combine the relevant teachings of the references," *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). *See also In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998) ("When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references").

The Examiner contends that it would have been obvious to a person of ordinary skill in the art to modify Schneier to include issuing an electronic lottery ticket for a lottery that will take place at a later time as referred to by Archer "to provide a system that facilitates the sale of lottery tickets without distributing bearer-type tickets and the like." Final Office Action at p. 4.

This is not an objective teaching that would lead one of ordinary skill in the art to combine these references to obtain appellant's claimed invention. Rather this is merely an alleged benefit of Archer's on-line gaming system over a traditional lottery arrangement.

Furthermore, the Examiner has failed to point to any motivation for modifying the instant-type lottery game of Schneier to provide lottery tickets for which lottery drawings take place at a later time.

The motivation that the Examiner has pointed to in Archer (*i.e.*, the elimination of bearer-type tickets) is insufficient because it is merely conclusory. Appellant submits, therefore, that the Examiner's purported motivation is a broad, conclusory statement without factual support. Broad conclusory statements, standing alone, are not sufficient to support an obviousness rejection. *See In re Freed*, 165 USPQ 570, 571-72 (CCPA 1970) (an obviousness rejection must be based on facts, "cold hard facts"); *see also In re Kotzab*, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("[b]road, conclusory statements standing alone are not 'evidence'"). The Examiner's statement that the combination "facilitates the sale of lottery tickets," without factual support, is insufficient as a matter of law. *See In re Dembiczak*, 50 USPQ2d 1614 (Fed. Cir. 1999).

Moreover, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. See *In re Malls*, 16 USPQ2d 1430 (Fed. Cir. 1999); see also *In re Fritch*, 23 USPQ2d 1780 (Fed. Cir. 1992) ("The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification."). While *Schneier* and *Archer* both relate to lottery systems, and assuming, *arguendo*, that combining *Schneier* and *Archer* yields all of the features appellant's claimed invention, without a proper showing of a suggestion or motivation to combine the references, a finding of obviousness is improper.

Appellant submits that the Examiner has employed hindsight reconstruction in combining the references. With the knowledge of appellant's novel approach for an interactive wagering application, particular features of the prior art were identified for use in rejecting appellant's claims invention. This technique has long been held invalid by the courts at creating a *prima facie* case of obviousness. See, e.g., *In re Fine* at 1600 ("One cannot use hindsight reconstruction to pick and choose among

isolated disclosures in the prior art to deprecate the claimed invention.").

The Examiner has used appellant's own claims as a bridge between Schneier and Archer. In doing so, the Examiner has demonstrated mere hindsight reconstruction, the very "syndrome" that the requirement for objective evidence is designed to combat, and the rejection is therefore insufficient as a matter of law. See *In re Dembiczak* at 1617-1618.

Because the Examiner failed to point to a suggestion or motivation for modifying Schneier with the teachings of Archer, appellant submits that the Examiner has failed to make a *prima facie* case of obviousness. See MPEP § 2142.

b. Schneier teaches away from the features of appellant's independent claims

Not only has the Examiner failed to present a sufficient suggestion or motivation to combine Schneier with Archer in the manner identified by the Examiner in order to show all of the elements of appellant's claimed invention, but such a suggestion or motivation cannot exist because Schneier actually teaches away from being modified to include the features of appellant's claimed invention. Prior art must be considered in its entirety, including disclosures that teach away from the claims. See MPEP

2141.02. If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *See In re Gordon*, 221 USPQ 1125 (Fed. Cir 1984).

Schneier refers to a system for playing "instant-type lottery games." As such, the system of Schneier is not capable of supporting a lottery for which a drawing takes place at a later time. In particular, in order to play the instant games of Schneier, a user purchases tickets having pre-determined outcomes and "plays" the games by revealing the predetermined outcome associated with the purchased tickets. The advantage of such a system according to Schneier is that it permits user to play the instant-type lottery games without being "physically or electronically connected to a lottery system network." Schneier at col. 1, ll. 27-28. However, in sharp contrast, a lottery game having an associated lottery drawing would require a connection to the lottery system network for the user to participate in the lottery (*i.e.*, in order to obtain and process the outcome of the associated lottery drawing).

Accordingly, because Schneier is solely directed toward a different type of lottery system than that recited

by appellant's claims, having different modes of operations and requirements, Schneier teaches away from the method and system of appellant's claimed invention.

3. Conclusion

In view of the foregoing, appellant submits that the Board should reverse the obviousness rejection of claims 1 and 11 under 35 U.S.C. § 103(a) as being obvious over Schneier in view of Archer. Appellant further submits that the Board should reverse the obviousness rejection of claims 2-6 and 12-16 at least because claims 2-6 and 12-16 depend from independent claims 1 and 11 respectively. See *In re Fine* at 1600.

B. Rejection of Claims 1 and 11 under 35 U.S.C. § 103(a) over Dickenson in view of Rittmaster and Archer

In the Final Office Action, the Examiner rejected claims 1 and 11 under 35 U.S.C. § 103(a) as being obvious over Dickenson in view of Rittmaster, in further view of Archer. Appellant requests that it be overturned for at least the reasons set forth below.

Dickinson refers to a lottery game terminal that provides a plurality of user selectable lottery games and is capable of operating in a multi-terminal statewide lottery game system. The game terminal of Dickinson does

not determine its geographic location. Nor do the plurality of user selectable games available to a player depend on the particular location of the terminal. Dickinson's game terminal includes a printer for printing out lottery tickets.

Rittmaster refers to a communications system that includes a provider processor and a plurality of recipient processors located at geographically remote locations that are connected via a communications network. Each recipient processor is associated with a positioning system, such as a GPS, for determining location information for the remote recipient system. The geographic location of each of the recipient processors may be used by the provider processor to determine whether to provide requested information to each of the recipient processors. Used in conjunction with a lottery system, the provider processor may restrict recipient processors from participating in lottery games if the recipient processors are located in jurisdictions that prohibit such lottery games.

1. The Examiner's Rejection

The Examiner contends that Dickinson refers to all of the elements of appellant's independent claims 1 and 11, except i) "determining the particular location of the user and providing a listing of lotteries in which the

user can participate on a visual display based on the particular location of the user" and ii) "issuing an electronic lottery ticket for the at least one of the lotteries, wherein a lottery drawing for the at least one of the lotteries will take place at a later time."

In an attempt to remedy these deficiencies, the Examiner has attempted to combine Dickinson with Rittmaster and Archer.

2. Appellant's Response to the Rejection

The Examiner has failed to establish a *prima facie* case of obviousness

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally the prior art reference (or references when combined) must teach or suggest all of the claim limitations. See MPEP 2143; see also *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Appellant submits that the Examiner has failed to establish a *prima facie* case of obviousness and that this

rejection is therefore insufficient as a matter of law. First, the Examiner has failed to point out any suitable suggestion or motivation to combine Dickinson, Rittmaster and Archer. Second, there cannot exist a suggestion or motivation to combine Dickinson with Rittmaster and Archer in the manner suggested by the Examiner at least because Dickinson teaches away from such a combination.

- a. The Examiner failed to present a suitable suggestion or motivation to combine Dickinson, Rittmaster, and Archer
-

Appellant submits that the Examiner has failed to fulfill the requirement of presenting an "objective teaching . . . or . . . knowledge generally available to one of ordinary skill in the art that would lead that individual to combine the relevant teachings of the references," *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); *see also In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998) ("When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references").

The Examiner contends that it would have been obvious to a person of ordinary skill in the art to modify Dickinson with Rittmaster to "ensure lottery legality in certain jurisdictions." Final Office Action at p. 5. The

Examiner further contends that it would have been obvious to a person of ordinary skill in the art to modify Dickinson with Archer to "facilitate the sale of lottery tickets without distributing bearer-type tickets." *Id.*

Appellant submits that the Examiner has merely listed alleged benefits of each of the references as motivation to combine instead of pointing to objective teachings that would lead one of ordinary skill in the art to combine the references to obtain appellant's claimed invention. Appellant submits, therefore, that the Examiner's purported motivation is a broad, conclusory statement without factual support. Broad conclusory statements, standing alone, are not sufficient to support an obviousness rejection. *See In re Freed*, 165 USPQ 570, 571-72 (CCPA 1970) (an obviousness rejection must be based on facts, "cold hard facts"); *see also In re Kotzab*, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("[b]road, conclusory statements standing alone are not 'evidence'"). These statement without factual support, are insufficient as a matter of law. *See In re Dembiczak*, 50 USPQ2d 1614 (Fed. Cir. 1999).

Moreover, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the

desirability of the combination. See *In re Malls*, 16 USPQ2d 1430 (Fed. Cir. 1999); see also *In re Fritch*, 23 USPQ2d 1780 (Fed. Cir. 1992) ("The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.") While Dickinson, Rittmaster, and Archer each relate to lottery systems, and assuming, *arguendo*, that combining Dickinson, Rittmaster, and Archer yields all of the features of appellant's claimed invention, without a proper showing of a suggestion or motivation to combine the references, a finding of obviousness is improper.

Appellant submits that the Examiner has employed hindsight reconstruction in combining the references. With the knowledge of appellant's novel approach for an interactive wagering application, particular features of the prior art were identified for use in rejecting appellant's claims invention. This technique has long been held invalid by the courts at creating a *prima facie* case of obviousness. See, e.g., *In re Fine* at 1600 ("One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.").

The Examiner has used appellant's own claims as a bridge between Dickinson, Rittmaster, and Archer. In doing so, the Examiner has demonstrated mere hindsight reconstruction, the very "syndrome" that the requirement for objective evidence is designed to combat, and the rejection is therefore insufficient as a matter of law. *See In re Dembiczak* at 1617-1618.

Because the Examiner failed to point to a suggestion or motivation for modifying Dickinson with the teachings of Rittmaster and Archer, appellant submits that the Examiner has failed to make a *prima facie* case of obviousness. *See* MPEP at 2142.

b. Dickinson teaches away from the features of appellant's independent claims

Not only has the Examiner failed to present a sufficient suggestion or motivation to combine Dickinson with Rittmaster and Archer in the manner identified by the Examiner in order to show all of the elements of appellant's claimed invention, but such a suggestion or motivation cannot exist because Dickinson actually teaches away from being modified to include the features of appellant's claimed invention. Prior art must be considered in its entirety, including disclosures that teach away from the claims. *See* MPEP 2141.02. If a

proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. See *In re Gordon*, 221 USPQ 1125 (Fed. Cir 1984).

Dickinson relates to a secure lottery system that uses a specialized lottery game terminal. The lottery game terminal of Dickinson is not a portable device and is therefore not moved from location to location - it remains stationary. Thus, there is no suggestion or motivation to modify Dickinson in order to determine the location of the user and to limit the listing of games based on location of the game terminal.

Further, Dickinson relates to a secure lottery system that uses a specialized lottery game terminal having the lottery software and specialized lottery ticket printing capabilities incorporated within the terminal. See Dickinson at p. 6, ll. 52-58. The terminal is specially designed, physically and logically, for its intended purpose of printing lottery tickets. This is in stark contrast to the standard insecure user equipment of Archer, which is connected to a remote lottery service provider and does not require printed tickets. Because modifying Dickinson in the manner indicated by the Examiner

would render Dickinson's system unsatisfactory for its intended purpose, there is no suggestion or motivation to make the proposed modification of Dickinson to facilitate the sale of lottery tickets without distributing bearer-type tickets.

Accordingly, because Dickinson is solely directed toward a different type of lottery system than that recited by appellant's claims, having different modes of operations and requirements, Dickinson teaches away from the method and system of appellant's claimed invention.

3. Conclusion

In view of the forgoing, appellant submits that the Board should reverse the obviousness rejection of claims 1 and 11 under 35 U.S.C. § 103(a) as being obvious over Dickinson, in view of Rittmaster, and in further view of Archer.

C. Rejection of claims 7, 9, 17, and 19 under 35 U.S.C. § 103(a) over Dickinson in view of Rittmaster and further in view of Lottobot

In the Final Office Action, the Examiner rejected dependent claims 7, 9, 17, and 19 in view of Dickinson and Rittmaster as applied to independent claims 1 and 11 in further view of Lottobot. Appellant submits that the Board should reverse the obviousness rejection of claims 7, 9,

17, and 19 at least because they depend upon independent claims 1 and 11 respectively. *See In re Fine* at 1600.

- D. Rejection of claims 8 and 18 under 35 U.S.C. § 103(a) over Dickinson in view of Rittmaster and Archer and further in view of SGI Insights.

In the Final Office Action, the Examiner rejected dependent claims 8 and 18 in view of Dickinson, Rittmaster, and Archer as applied to independent claims 1 and 11 in further view of SGI Insights. Appellant submits that the Board should reverse the obviousness rejection of claims 8 and 18 at least because they depend upon independent claims 1 and 11 respectively. *See In re Fine* at 1600.

- E. Rejection of claims 6 and 16 under 35 U.S.C. § 103(a) over Dickinson in view of Rittmaster and Archer in further view of Luciano

In the Final Office Action, the Examiner rejected dependent claims 6 and 16 in view of Dickinson, Rittmaster, and Archer as applied to claims 1 and 11 in further view of Luciano.

Appellant's dependent claims 6 and 16 are directed toward a method and a system that records, in a multimedia format, lottery drawings associated with lotteries in which the user participated.

Luciano refers to a video lottery game system using multiple player-activated video terminals that are linked to computers. Each player places a wager and selects his lottery draw choices. The system enrolls the player in a future lottery game after the player makes his choices. After the central game server generates random game selections and communicates these random game selections to the central accounting server and to the scoreboard, the central game server records the random game selections and then repeats the process. Each video terminal may then display the results of each lottery game in such a manner as to provide the excitement of a real-time game.

The Examiner asserts that the lottery system suggested by the combination of Dickinson, Rittmaster, and Archer shows all of the features of appellant's claims except for multimedia recording of the lottery drawings associated with the lotteries in which the user participated. Regardless of this deficiency, the Examiner asserts that recording lottery drawings in a multimedia format would have been obvious to one skilled in the art in view of Luciano.

Whether taken alone or in combination, neither Dickinson nor Rittmaster nor Archer nor Luciano shows or

suggests recording, in a multimedia format, the lottery drawings associated with the lotteries in which a user participated. In spite of the Examiner's contention to the contrary, Luciano makes no mention of recording lottery drawings in a multimedia format. Rather, Luciano merely "stores records for each lottery game . . . [e]ach lottery game record includes the lottery draws for the game and player enrollment for each game." Luciano at col. 5, ll. 57-60. Thus, Luciano stores the results (*i.e.*, winning numbers) of lottery drawings in a numerical format, but does not record lottery drawings in a multimedia format as required by appellant's claims.

Therefore, whether taken alone or in combination, Dickinson, Rittmaster, Archer, and Luciano all fail to show the features of appellant's claims 6 and 16.

For at least this additional reason, appellant submits that the Board should reverse the obviousness rejection of dependent claims 6 and 16 under 35 U.S.C. § 103(a) as being obvious in view of Dickinson, Rittmaster, Archer, and Luciano.

F. Rejection of claims 10 and 20 under
 35 U.S.C. § 103(a) over Dickenson
 in view of Rittmaster and Archer
 in further view of McCollom

In the Final Office Action, the Examiner rejected dependent claims 10 and 20 in view of Dickinson, Rittmaster, and Archer as applied to claims 1 and 11 in further view of McCollom.

Appellant's dependent claims 10 and 20 are directed toward a method and a system that creates a wager based on user inputs, gives the user the ability to finalize the wager at a later time, and then reminds the user to finalize the wager.

McCollom refers to a system for publishing, distributing and redeeming coupons on a network. Additionally, McCollom refers to a "shopping list" or "wish list" containing items that a user stores for future purchase.

The Examiner asserts that the lottery system suggested by the combination of Dickinson, Rittmaster, and Archer shows all of the features of appellant's claims except for giving the user the ability to "finalize the wager at a later time and reminding the user to finalize the wager." Final Office Action at p. 9. Regardless of this deficiency, the Examiner asserts that McCollom "teaches an analogous networked system in which users are

able to purchase items and coupons over a network, wherein the users are able to finalize their purchases at a later time and be reminded to finalize their purchase." *Id.*

Appellant submits that whether taken alone or in combination, Dickinson, Rittmaster, Archer, and McCollom, do not show or suggest giving the user the ability to finalize a wager at a later time and reminding the user to finalize the wager. In particular, McCollom, the reference on which the Examiner relies to show this feature, does not show or suggest this feature. Instead, McCollom merely refers to a wish list that is part of an online shopping application. The wish list of McCollom does not remind the user to complete a purchase stored in the wish list.

Further, appellant's claims 10 and 20 are directed toward an interactive wagering application, which is not an analogous system to McCollom's system for publishing, distributing and redeeming coupons. The fact that both systems relate to executing purchases using a computer is not a sufficient relationship. Appellant submits that the Examiner has failed to provide an objective motivation to combine these references.

For at least these additional reasons, appellant submits that the Board should reverse the obviousness rejection of dependent claims 10 and 20 under 35 U.S.C. §

103(a) as being obvious in view of Dickinson, Rittmaster, Archer, and McCollom.

G. Rejection of claims 21-32 under
 35 U.S.C. § 103(a) over Walker in
 view of Archer in further view of Small

In the Final Office Action, the Examiner rejected claims 21-32 under 35 U.S.C. § 103(a) as being obvious over Walker in view of Archer in further view of Small.

Appellant traverses this rejection and requests that it be overturned for at least the reasons set forth below.

Appellant's independent claims 21 and 27 are directed toward a method and a system for using an interactive wagering application to allow a user to automatically participate in a lottery using electronic user equipment. The user is given the ability to specify conditions via the user equipment, on which the interactive wagering application is at least partially implemented. The interactive wagering application automatically participates in the lottery on behalf of the user when the conditions are met. Further, the wagering application notifies the user of the user's automatic participation in the lottery.

Walker refers to a lottery system in which a user must purchase tickets from a lottery agent. After entering

necessary information (*i.e.*, lottery numbers and conditions for participating) on a slip of paper by hand, the user must present the slip to a lottery agent who must then scan the slip into his lottery terminal in order to issue and print lottery tickets. The user is not notified when the conditions have been met and the user must attempt to figure out independently when the user has been entered in the lottery.

Small refers to an automated marketing and gaming system in which a remote financial institution interface device (*i.e.*, an ATM) automatically enters users into a sweepstakes-type game. The sweepstakes-type games may include a government-associated lottery game. The user is notified by the interface device (*i.e.*, the ATM) that he has been entered in the game. For example, in order to encourage a user to use a particular ATM, the user is provided with free entries into a sweepstakes game with each use.

1. The Examiner's Rejection

The Examiner contends that Walker refers to a conditional lottery system. However, the Examiner concedes that Walker does not show or suggest allowing a user to participate in a lottery automatically using electronic user equipment. In an attempt to remedy this deficiency,

the Examiner seeks to combine Walker with the online lottery system of Archer. However, the Examiner further concedes that Walker and Archer do not show or suggest notifying the user of automatic participation in the lottery. In attempt to remedy this further deficiency, the Examiner seeks to combine Walker, Archer, and Small.

2. Appellant's Response to the Rejection

The Examiner has failed to establish a
prima facie case of obviousness

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally the prior art reference (or references when combined) must teach or suggest all of the claim limitations. See MPEP 2143; see also *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Appellant submits that the Examiner has failed to establish a *prima facie* case of obviousness and that this rejection is therefore insufficient as a matter of law. First, the Examiner has failed to point out any suitable suggestion or motivation to combine Walker with Archer and

Small. Second, whether taken alone or in combination Walker, Small, and Archer do not show or suggest all of the elements of appellant's claims.

- a. The Examiner failed to present a suitable suggestion or motivation to combine Walker, Archer, and Small

Appellant submits that the Examiner has failed to fulfill the requirement of presenting an "objective teaching . . . or . . . knowledge generally available to one of ordinary skill in the art that would lead that individual to combine the relevant teachings of the references," *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988); see also *In re Rouffet*, 149 F.3d 1350, 1355 ("When a rejection depends on a combination of prior art references, there must be some teaching, suggestion, or motivation to combine the references").

The Examiner contends that it would have been obvious to a person of ordinary skill in the art to modify Walker to include the features of Archer and Small "in order to facilitate the sale and distribution of lottery tickets which enhances revenue and an inform [sic] that a user has been successfully entered into the lottery." Final Office Action at p. 10.

This is not an objective teaching that would lead one of ordinary skill in the art to combine these references to obtain appellant's claimed invention. Rather this is merely an alleged benefit of these features over a traditional lottery arrangement.

Instead of providing an objective teaching or motivation to combine Walker, Archer, and Small, the Examiner merely concludes that it would have been obvious these references because the sale and distribution of lottery tickets online would "enhance revenues." The fact that adding a feature would improve the system or make the system more profitable is not an objective teaching that would lead one of ordinary skill in the art to combine the references to obtain appellant's invention. Appellant submits, therefore, that the Examiner's purported motivation is a broad, conclusory statement without factual support. Broad conclusory statements, standing alone, are not sufficient to support an obviousness rejection. See *In re Freed*, 165 USPQ 570, 571-72 (CCPA 1970) (an obviousness rejection must be based on facts, "cold hard facts"); see also *In re Kotzab*, 55 USPQ2d 1313, 1317 (Fed. Cir. 2000) ("[b]road, conclusory statements standing alone are not 'evidence'"). The Examiner's statement that the combination will "enhance revenues," without factual

support, is insufficient as a matter of law. See *In re Dembiczak*, 50 USPQ2d 1614 (Fed. Cir. 1999).

Moreover, the mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. See *In re Malls*, 16 USPQ2d 1430 (Fed. Cir. 1999); see also *In re Fritch*, 23 USPQ2d 1780 (Fed. Cir. 1992) ("The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. "). While Walker, Archer, and Small each relate to lottery systems, and assuming, *arguendo*, that combining Walker, Archer, and Small yields all of the features appellant's claimed invention, without a proper showing of a suggestion or motivation to combine the references, a finding of obviousness is improper.

Appellant submits that the Examiner has employed hindsight reconstruction in combining the references. With the knowledge of appellant's novel approach for an interactive wagering application, particular features of the prior art were identified for use in rejecting appellant's claims invention. This technique has long been held invalid by the courts at creating a *prima facie* case

of obviousness. See *In re Fine* at 1600 ("One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.").

The Examiner has used appellant's own claims as a bridge between the Walker, Archer, and Small. In doing so, the Examiner has demonstrated mere hindsight reconstruction, the very "syndrome" that the requirement for objective evidence is designed to combat, and the rejection is therefore insufficient as a matter of law. See *In re Dembiczak* at 1617-1618.

Because the Examiner failed to point to a suggestion or motivation for modifying Walker with the teachings of Archer and Small, appellant submits that the Examiner has failed to make a *prima facie* case of obviousness. See MPEP § 2142.

- b. The cited references do not show or suggest all of the elements of appellant's claims

The Examiner has failed to present a sufficient suggestion or motivation to combine Walker with Small and Archer in the manner identified by the Examiner in order to show all of the elements of appellant's claimed invention. Moreover, appellant submits that nothing in either Walker or Archer or Small shows or suggests automatically

participating in the lottery on behalf of a user when user specified conditions have been met and notifying the user of the automatic participation in the lottery.

The Examiner concedes that Walker and Archer do not show or suggest notifying the user of the automatic participation in the lottery based on user specified conditions and relied, instead, on Small. Small, however, does not overcome the deficiencies of these disclosures.

Small refers to notifying the user when he has been entered into a sweepstakes-type game by a remote institution interface device. The user requires notification because the user does not intend to play the sweepstake-type game. The sweepstakes is merely an incentive provided by the interface device to encourage use (e.g., of an ATM). While Small refers to notifying a user that he has been automatically entered into a sweepstakes drawing, Small still does not show or suggest appellant's claimed feature of "notifying the user of the automatic participation in the lottery [when user specified conditions have been met]."

Therefore, whether taken alone or in combination, Walker, Archer, and Small fail to show all of the features of appellant's independent claims 21 and 27.

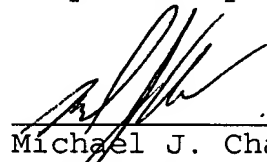
3. Conclusion

In view of the foregoing, appellant submits that the Board should reverse the obviousness rejection of claims 21 and 27 under 35 U.S.C. § 103(a) as being obvious over Walker, in view of Archer, and in further view of Small. Appellant submits that the Board should reverse the obviousness rejection of claims 22-26 and 28-32 at least because claims 22-26 and 28-32 depend from independent claims 21 and 27 respectively. See *In re Fine* at 1600.

H. Conclusion

For the reasons set forth above, appellant submits that claims 1-32 are in condition for allowance. The Examiner's rejections of these claims should be reversed.

Respectfully submitted,



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(viii.) Claims Appendix

CLAIMS APPENDIX A
CLAIMS 1-32 ON APPEAL

1. A method for using an interactive wagering application to allow a user in a particular location to participate in lottery wagering using user equipment, comprising:

determining the particular location of the user;

providing a listing of lotteries in which the user can participate on a visual display based on the particular location of the user;

giving the user the ability to participate in at least one of the lotteries using the user equipment; and

issuing an electronic lottery ticket for the at least one of the lotteries, wherein a lottery drawing for the at least one of the lotteries will take place at a later time.

2. The method of claim 1 further comprising notifying the user, after the lottery drawing, that results to the at least one of the lotteries in which the user participated are available.

3. The method of claim 2 wherein the notification is selected from a group consisting of a pop-up overlay, an icon, an e-mail, an instant message, a pager message, a telephone message, and any combination thereof.

4. The method of claim 1 further comprising displaying results to at least one of the lotteries in which the user participated.

5. The method of claim 4 further comprising indicating whether the user won for each of the lotteries for which results are displayed.

6. The method of claim 1 further comprising recording, in a multimedia format, the lottery drawings associated with the lotteries in which the user participated.

7. The method of claim 1 further comprising reminding the user of an upcoming lottery drawing associated with at least one of the lotteries in which the user participated.

8. The method of claim 1 further comprising giving the user the ability to generate a lottery gift certificate.

9. The method of claim 1 further comprising displaying a user interface to the user to use in creating a wager for at least one of the lotteries, wherein the user interface is customized for each one of the lotteries.

10. The method of claim 1 further comprising:
creating a wager based on user inputs;
giving the user the ability to finalize the
wager at a later time; and
reminding the user to finalize the wager.

11. An interactive wagering system for using an interactive wagering application to allow a user in a particular location to participate in lottery wagering using user television equipment, comprising user equipment configured to:

determine the particular location of the
user;

provide a listing of lotteries in which the user can participate on a visual display based on the particular location of the user;

give the user the ability to participate in at least one of the lotteries using the user television equipment; and

issue an electronic lottery ticket for the at least one of the lotteries, wherein a lottery drawing for the at least one of the lotteries will take place at a later time.

12. The system of claim 11 further comprising user equipment configured to notify the user, after the lottery drawing, that results to the at least one of the lotteries in which the user participated are available.

13. The system of claim 12 wherein the notification is selected from a group consisting of a pop-up overlay, an icon, an e-mail, an instant message, a pager message, a telephone message, and any combination thereof.

14. The system of claim 11 further comprising user equipment configured to display results to at least one of the lotteries in which the user participated.

15. The system of claim 14 further comprising user equipment configured to indicate whether the user won for each of the lotteries for which results are displayed.

16. The system of claim 11 further comprising user equipment configured to record, in a multimedia format, the lottery drawings associated with the lotteries in which the user participated.

17. The system of claim 11 further comprising user equipment configured to remind the user of an upcoming lottery drawing associated with at least one of the lotteries in which the user participated.

18. The system of claim 11 further comprising user equipment configured to give the user the ability to generate a lottery gift certificate.

19. The system of claim 11 further comprising user equipment configured to display a user interface to the user to use in creating a wager for at least one of the lotteries, wherein the user interface is customized for each one of the lotteries.

20. The system of claim 11 further comprising user equipment configured to:

create a wager based on user inputs;

give the user the ability to finalize the wager at a later time; and

remind the user to finalize the wager.

21. A method for using an interactive wagering application to allow a user to participate in a lottery automatically using electronic user equipment, comprising:

giving the user the ability to specify conditions via the user equipment on which the interactive wagering application is at least partially implemented;

automatically participating in the lottery on behalf of the user when the conditions have been met; and

notifying the user of the automatic participation in the lottery.

22. The method of claim 21 wherein automatically participating in the lottery comprises using a default set of lottery numbers.

23. The method of claim 22 wherein the default set of lottery numbers are user-specified.

24. The method of claim 21 wherein automatically participating in the lottery comprises using a set of randomly generated lottery numbers.

25. The method of claim 21 wherein the conditions are based on factors selected from the group consisting of a period of time from the last time the user participated in the lottery, the lottery prize, odds of winning, and any combination thereof.

26. The method of claim 21 further comprising automatically participating in the lottery on behalf of the user every time the lottery is offered.

27. A system for using an interactive wagering application to allow a user to participate in a lottery automatically comprising electronic user equipment configured to:

give the user the ability to specify conditions via the user equipment on which the interactive wagering application is at least partially implemented;

automatically participate in the lottery on behalf of the user when the conditions have been met; and notify the user of the automatic participation in the lottery.

28. The system of claim 27 further comprising user equipment configured to use a default set of lottery numbers when automatically participating in the lottery.

29. The system of claim 28 wherein the default set of lottery numbers are user-specified.

30. The system of claim 27 further comprising user equipment configured to use a set of randomly generated lottery numbers when automatically participating in the lottery.

31. The system of claim 27 wherein the conditions are based on factors selected from the group consisting of a period of time from the last time the user participated in the lottery, the lottery prize, odds of winning, and any combination thereof.

32. The system of claim 27 further comprising user equipment configured to automatically participate in the lottery on behalf of the user every time the lottery is offered.

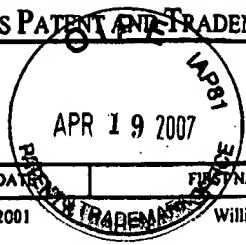
(ix.) Evidence Appendix

EVIDENCE APPENDIX B
COPY OF THE FINAL OFFICE ACTION DATED APRIL 19, 2006



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/809,922	03/16/2001	William L. Thomas	ODS-38	7120

1473 7590 04/19/2006
FISH & NEAVE IP GROUP
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EXAMINER

RADA, ALEX P

ART UNIT PAPER NUMBER

3712

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/809,922

Applicant(s)

THOMAS, WILLIAM L.

Examiner

Alex P. Rada

Art Unit

3712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

In response to the amendment filed January 26, 2006 in which the applicant cancels claims 33-84, amends claims 1-2, 4, 11-12, 14, 21, and 27, and claims 1-32 are pending in this office application.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6 and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneier et al. (U.S. 6,402,614) in view of Archer (US 6,277,026).
3. Schneier et al discloses regarding claims 1 and 11, Schneier et al disclose determining the particular location of the user (col. 18, lines 1-7 and col. 18, line 55 to col. 19, line 25 and Figure 5 along with the related description thereof, wherein the HTV 20 includes GPS receiver 111 to communicate temporal and positional information), providing a listing of lotteries in which the user can participate on a visual display based on the particular location of the user (col. 20, lines 27-34 and Figure 5 along with the related description thereof, wherein the CMC 12 enables/disables certain lottery games based on the temporal and positional information communicated by the GPS receiver 111 of HTV 20), giving the user the ability to participate in at least one of the lotteries using the user equipment (col. 16, lines 22-37 and col. 20, lines 3-15, wherein the HTV 20 includes a touch

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screen display 84 enabling a user to participate in certain lottery games enabled by the CMC 12 based on the temporal and positional information communicated by the GPS receiver 111 of HTV 20) as recited in claims 1 and 11.

Regarding claims 2 and 12, Schneier et al. disclose that the user equipment is configured to notify the user that results to at least one of the lotteries in which the user participated are available (col. 19, lines 54-64 and Figure 13 along with the related description thereof).

Regarding claims 3 and 13, Schneier et al. disclose that the notification is an instant message, a pager message or a telephone message (col. 10, lines 36-46, wherein a telephone network or an interactive communications network is used to facilitate game play in which the user is notified of lottery results, e.g., see col. 19, lines 54-64 and Figure 13 along with the related description thereof).

Regarding claims 4 and 14, Schneier et al. disclose that the user equipment is configured to display the results to at least one of the lotteries in which the user participated (col. 19, lines 54-64 and col. 20, lines 32-34, wherein display 84 of HTV 20 displays lottery results).

Regarding claims 5 and 15, Schneier et al. disclose that the user equipment is configured to indicate whether the user won for each of the lotteries for which results are displayed (col. 19, lines 54-64 and col. 20, lines 32-34, wherein display 84 of HTV 20 displays lottery results).

Regarding claims 6 and 16, Schneier et al. disclose that the user equipment is configured to record, in a multimedia format, the lottery drawings associated with the lotteries in which the user participated (col. 20, lines 40-56, wherein the messages containing lottery game outcomes, i.e., lottery drawings, contain text or graphics and can be orally communicated)

Schneier et al does not expressly disclose regarding claims 1 and 11, issuing an electronic lottery ticket for the at least one of the lotteries, wherein a lottery drawing for the at least one of the lotteries will take place at a later time.

Archer teaches regarding claims 1 and 11, issuing an electronic lottery ticket for the at least one of the lotteries, wherein a lottery drawing for the at least one of the lotteries will take place at a later time (Figures 4A-4D and 5A along with the related description thereof). By issuing lottery tickets for lottery drawings for a later time, one of ordinary skill in the art would provide a system that facilitates the sale of lottery tickets without distributing bearer-type tickets and the like.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Schneier et al to include issuing an electronic lottery ticket for the at least one of the lotteries, wherein a lottery drawing for the at least one of the lotteries will take place at a later time as taught by Archer to provide a system that facilitates the sale of lottery tickets without distributing bearer-type tickets and the like.

4. Claims 1 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickinson et al. (GB 2,147,773) and in view of Rittmaster (U.S. 2002/0023010) and Archer (US 6,277,026).

5. Dickinson et al discloses regarding claims 1 and 11, providing a listing of lotteries in which the user can participate on a visual display (Figures 1, 6-9B along with the related description thereof) and giving the user the ability to participate in at least one of the lotteries using the user equipment (Figures 1, 6-9B along with the related description thereof).

Dickinson et al. does not expressly disclose regarding claims 1 and 11, determining the particular location of the user and providing a listing of lotteries in which the user can participate on a visual display based on the particular location of the user and issuing an electronic lottery ticket for the at least one of the lotteries, wherein a lottery drawing for the at least one of the lotteries will take place at a later time and issuing an electronic lottery ticket for the at least one of the lotteries, wherein a lottery drawing for the at least one of the lotteries will take place at a later time.

Rittmaster et al. teaches regarding claims 1 and 11, limiting lotteries to geographic locations where such lotteries are legal (paragraphs [0006] and [0039]). Rittmaster et al. teach determining the particular location of the user (Figure 2 along with the related description thereof) and providing a listing of lotteries in which the user can participate on a visual display based on the particular location of the user (Figure 3 along with the related description thereof, wherein geographic information is used to allow or deny access to a product or service (i.e., the lottery listing of Dickinson). Rittmaster et al. teach that limiting lottery availability based on geographic information determined from players helps to ensure lottery legality in certain jurisdictions (paragraph [0006]).

Archer teaches the regarding claims 1 and 11, issuing an electronic lottery ticket for the at least one of the lotteries, wherein a lottery drawing for the at least one of the lotteries will take place at a later time (Figures 4A-4D and 5A along with the related description thereof). By issuing lottery tickets for lottery drawings for a later time, one of ordinary skill in the art would provide a system that facilitates the sale of lottery tickets without distributing bearer-type tickets and the like.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Dickinson et al to include limit lottery availability based on geographic information determined from players and issuing electronic tickets for lotteries taking place at a later time as taught by Rittmaster et al and Archer to ensure lottery legality in certain jurisdictions as desirably and a system that facilitates the sale of lottery tickets without distributing bearer-type tickets and the like.

6. Claims 2-5, 7, 9, 12-15, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickinson et al. in view of Rittmaster et al. and Archer, as applied to claims 1 and 11 above, and further in view of LottoBot.

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The combination of Dickinson et al. and Rittmaster et al. and Archer teaches a method and system as described above with respect to claims 1 and 11, respectively. However, the combination of Dickinson et al. and Rittmaster et al. and Archer does not explicitly teach various lottery functions recited in dependent claims 2-5, 7, 9, 12-15, 17 and 19. In a related lottery application, LottoBot teaches an analogous lottery system allowing users to access lottery data and play lottery games over the Internet through user equipment (pages 1 and 20-21). LottoBot further teaches that lottery results and winning numbers can be communicated to players as a convenience to the player (pages 20-21), which enables player's to check lottery results and winning numbers from their personal computers. It would have been obvious for one skilled in the art at the time of the invention to incorporate the notification of lottery results and winning numbers of LottoBot into the combination of Dickinson et al. and Rittmaster et al. and Archer in order to increase player convenience by allowing players to check lottery results and winning numbers from their personal computers as desirably taught by LottoBot on pages 20-21.

Regarding claims 2 and 12, LottoBot teaches that users, after the lottery drawing are notified that their lottery results are available through e-mail or pager message (pages 1 and 5).

Regarding claims 3 and 13, LottoBot teaches that users are notified that their lottery results are available through pager message (page 1).

Regarding claims 4 and 14, LottoBot teaches displaying the results to at least one of the lotteries in which the user participated (page 1).

Regarding claims 5 and 15, LottoBot teaches indicating whether the user won for each of the lotteries in which the user participated (page 1).

Regarding claims 7 and 17, LottoBot teaches reminding a user of an upcoming lottery drawing, through jackpot alerts, with at least one of the lotteries in which the user participated (page 1).

Regarding claims 9 and 19, LottoBot teaches displaying a user interface to the user for use in creating a lottery wager, wherein the user interface is customized for each lottery (page 4).

7. Claims 6 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickinson et al. in view of Rittmaster et al. and Archer, as applied to claims 1 and 11 above, and further in view of Luciano et al. (U.S. Patent No. 6,168,521).

The combination of Dickinson et al. and Rittmaster et al. and Archer teaches a method and system as described above with respect to claims 1 and 11, respectively. In particular, the combination of Dickinson et al. and Rittmaster et al. and Archer teaches lottery game availability based on geographic location, wherein users can play available lottery games. However, the combination of Dickinson et al. and Rittmaster et al. does not explicitly teach recording, in a multimedia format, the lottery drawings associated with the lotteries in which the user participated. In a related lottery application, Luciano et al. teach multiple player activated video terminals linked to computers (abstract). Each player places a wager and selects a particular lottery draw choices. The system enrolls the player in a future lottery game based on the choices. (Abstract). After drawing winning lottery numbers, the system displays the result of the selected game displayed at the player's terminal in a multimedia format (see Figure 9 along with the related description thereof), such that the player can activate a stored replay of the draw (Figure 6 along with the related description thereof). Luciano et al. teach that the video lottery system provides more excitement and entertainment than traditional lottery systems (col. 1, lines 22-27). It would have been obvious for one skilled in the art at the time of the invention to incorporate the recordation of lottery results

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in a multimedia format presented to players of the lottery as taught by Luciano et al. into the lottery method and system as taught by the combination of Dickinson et al., Rittmaster and Archer in order to increase player excitement and entertainment as desirably taught by Luciano et al. in col. 1, lines 22-27.

8. Claims 8 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickinson et al. in view of Rittmaster et al. and Archer, as applied to claims 1 and 11 above, and further in view of SGI Insights, Scientific Gaming International, vol. 1, issue no. 5 (hereafter "SGI Insights").

The combination of Dickinson et al. and Rittmaster et al. and Archer teaches a method and system as described above with respect to claims 1 and 11, respectively. In particular, the combination of Dickinson et al. and Rittmaster et al. and Archer teaches lottery game availability based on geographic location, wherein users can play available lottery games. However, the combination of Dickinson et al. and Rittmaster et al. does not explicitly teach generating lottery gift certificates. In a related lottery application, SGI Insights teaches the generation of lottery gift certificates for play in a future lottery (page 4). SGI Insights teaches that lottery gift certificates increase player appeal as recipients can use the gift certificates at any time, e.g., when the jackpot gets bigger (page 4). It would have been obvious for one skilled in the art at the time of the invention to incorporate the generation of lottery gift certificates as taught by SGI Insights into the lottery method and system as taught by the combination of Dickinson et al., Rittmaster and Archer in order to increase player appeal to the lottery games provided thereby as desirably taught by SGI Insights on page 4.

9. Claims 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dickinson et al. in view of Rittmaster et al. and Archer, as applied to claims 1 and 11 above, and further in view of McCollom et al. (U.S. Patent Application Publication 2002/001623).

The combination of Dickinson et al. and Rittmaster et al. and Archer teaches a method and system as described above with respect to claims 1 and 11, respectively. In particular, the combination of Dickinson et al. and Rittmaster et al. and Archer teaches lottery game availability based on geographic location, wherein users can create a wager based on user inputs to play available lottery games (Figure 1 of Dickinson et al. along with the related description thereof). However, the combination of Dickinson et al. and Rittmaster et al. and Archer does not explicitly teach giving the user the ability to finalize the wager at a later time and reminding the user to finalize the wager, as recited in claims 10 and 20. It is notoriously well known to offer products and services over a network and to allow the purchaser of such products and services to finalize a purchase at a later time and/or be reminded to finalize the purchase. McCollom et al. teach an analogous networked system in which users are able to purchase items and coupons over a network, wherein the users are able to finalize their purchase at a later time and be reminded to finalize their purchase (Figures 13, 14 and 17 along with the related description thereof, wherein purchases are placed in a "shopping basket" or "wish list" for later purchase). The system display provides an indication reminding the purchaser that the purchase is not finalized (Figures 21 and 22 along with the related description thereof). McCollom et al. teach that finalizing purchases and reminding users of the same improves the system by allowing users to browse, assemble and store selections until electing to make a purchase (paragraphs [0132] to [0137]). It would have been obvious for one skilled in the art at the time of the invention to incorporate the ability for users or purchases to finalize a purchase and be reminded of the same as taught by McCollom et al. into the lottery method and system as taught by the combination of Dickinson et al., Rittmaster and Archer in order to browse, assemble and store lottery selections until electing to make a purchase as desirably taught by McCollom et al. in paragraphs [0132] to [0137].

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10. Claims 21-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walker et al. (U.S. Patent No. 6,325,716) in view of Archer (U.S. Patent No. 6,277,026) and Small (U.S. Patent No. 4,815,741).

Walker teaches a method as recited in claims 21 and 27. The disclosed method comprises giving the user the ability to set conditions via user equipment on which an interactive wagering application is partially implemented and automatically participating in the lottery on the behalf of the user when the conditions have been met See col. 2:36-3:35. However, Walker employs paper tickets and does not explicitly teach electronic user equipment. Archer teaches an analogous system for selling lottery tickets online via electronic user equipment. See Figs. 1, 4A along with the related description thereof and col. 5:10-15. Archer teaches that the electronic user equipment facilitate the sale and distribution of lottery tickets online, which enhances revenues (col. 1:36-67). Walker et al in view of Archer do not explicitly disclose notifying the user of the automatic participated in the lottery. However, Small teaches an analogous system for notifying the user of the automatic participation in the lottery (summary). It would have been obvious for one skilled in the art at the time of the invention to incorporate the electronic user equipment and notifying the user of the automatic participated in the lottery as taught by Archer and Small into the interactive wagering application of Walker et al. in order to facilitate the sale and distribution of lottery tickets which enhances revenues and an inform that a user has been successfully entered in the lottery as desirably taught by Archer in col. 1:36-67 and Small (summary).

Regarding claims 22 and 28, Walker teaches automatically participating in the lottery comprises using a default set of lottery numbers (col. 3:1-8, col. 5:1-19).

Regarding claims 23 and 29, Walker teaches default sets of lottery numbers are user-specified (col. 3:1-8, col. 5:1-19).

Regarding claims 24 and 30, Walker teaches automatically participating in the lottery comprises using a set of randomly generated lottery numbers (col. 3:1-8, col. 5:1-19).

Regarding claims 25 and 31, Walker teaches conditions based on factors selected from the group consisting of a period of time from the last time the user participated, the lottery prize, the odds of winning and any combination thereof (col. 2:54-3:1 and col. 4:11-27). In regard to the odds of winning, the Walker teaches enrolling a ticket based on a minimum payout, which determines the ticket's expected payout (i.e. odds of winning a particular payout).

Regarding claims 26 and 32, Walker teaches automatically participating in the lottery on behalf of the user every time the lottery is offered (col. 1:55-64 and col. 2:54-64).

Response to Arguments

11. Applicant's arguments with respect to claims 1-32 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

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calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alex P. Rada whose telephone number is 571-272-4452. The examiner can normally be reached on Monday - Friday, 08:00-16:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xuan Thai can be reached on 571-272-7147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Am
APR


XUAN M. THAI
SUPERVISORY PATENT EXAMINER
TC3700

EVIDENCE APPENDIX C
COPY OF SCHNEIER ET AL. U.S. PATENT NO. 6,402,614



US006402614B1

(12) **United States Patent**
Schneier et al.

(10) **Patent No.:** **US 6,402,614 B1**
(45) **Date of Patent:** ***Jun. 11, 2002**

(54) **OFF-LINE REMOTE SYSTEM FOR
LOTTERIES AND GAMES OF SKILL**

(75) Inventors: **Bruce Schneier**, Minneapolis, MN
(US); **Jay S. Walker**, Ridgefield;
James Jorasch, Stamford, both of CT
(US)

(73) Assignee: **Walker Digital, LLC**, Stamford, CT
(US)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

This patent is subject to a terminal dis-
claimer.

(21) Appl. No.: **09/063,590**

(22) Filed: **Apr. 21, 1998**

Related U.S. Application Data

(63) Continuation-in-part of application No. 08/624,998, filed on
Mar. 29, 1996, now Pat. No. 5,871,398, which is a continu-
ation-in-part of application No. 08/497,080, filed on Jun. 30,
1995, now Pat. No. 6,024,640.

(51) Int. Cl.⁷ **A63F 9/24**

(52) U.S. Cl. **463/17; 463/40**

(58) Field of Search **463/16-18, 25,**
463/29, 30, 36, 40-42; 273/269, 138.1,
138.2, 139

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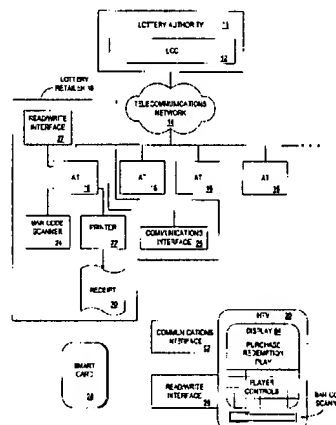
Primary Examiner—Mark Sager

(74) *Attorney, Agent, or Firm*—Dean P. Alderucci; Michael
D. Downs

(57) **ABSTRACT**

An off-line remote lottery system which enables players to
purchase instant-type lottery game outcomes from a ran-
domized prize data stream in a central computer, and view
the outcomes on remotely disposed gaming computers
which do not require an on-line connection during play.

12 Claims, 15 Drawing Sheets



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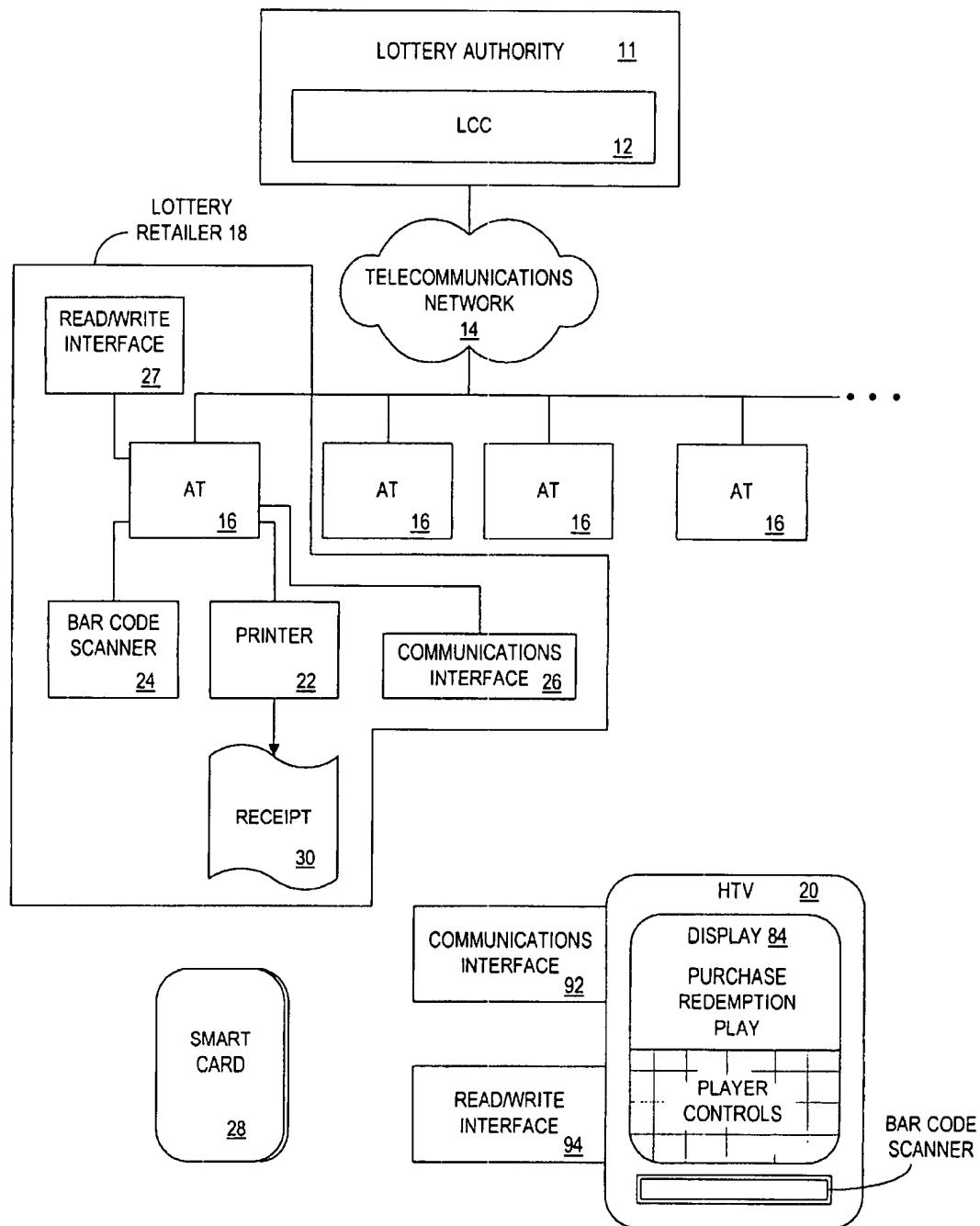


FIG. 1

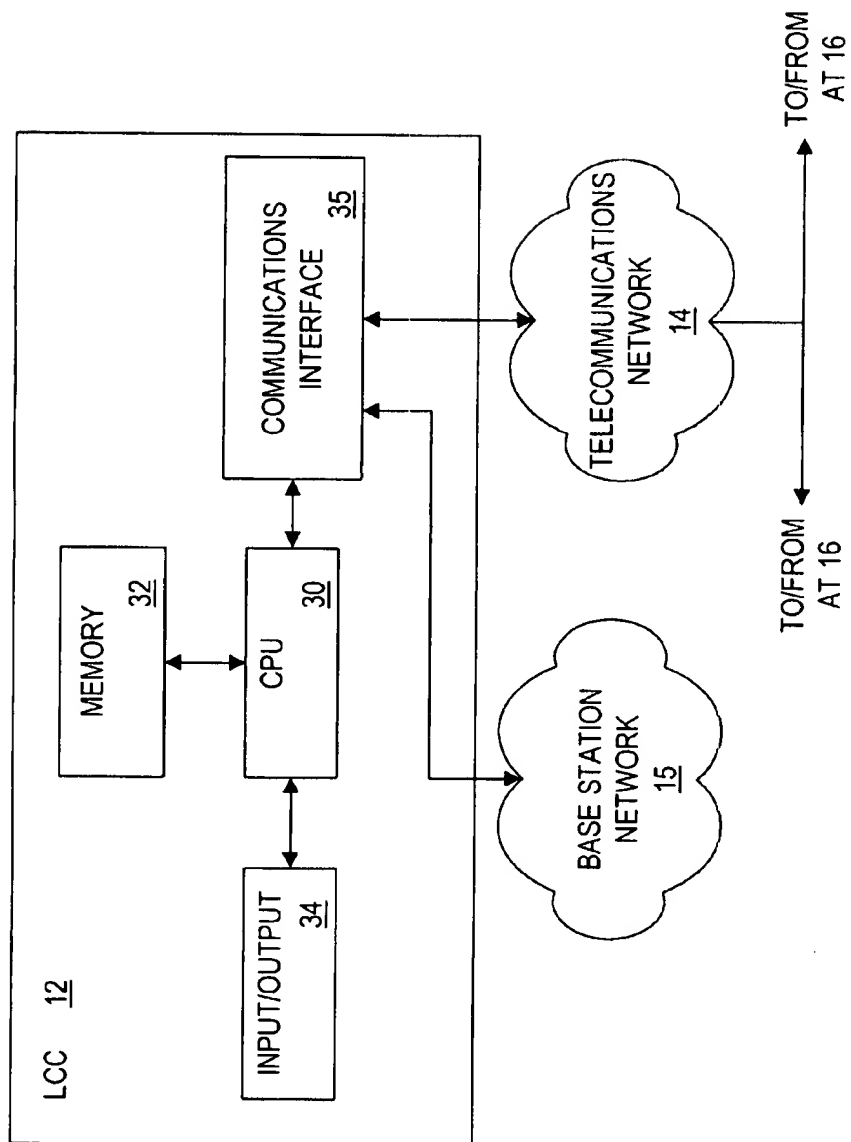


FIG. 2

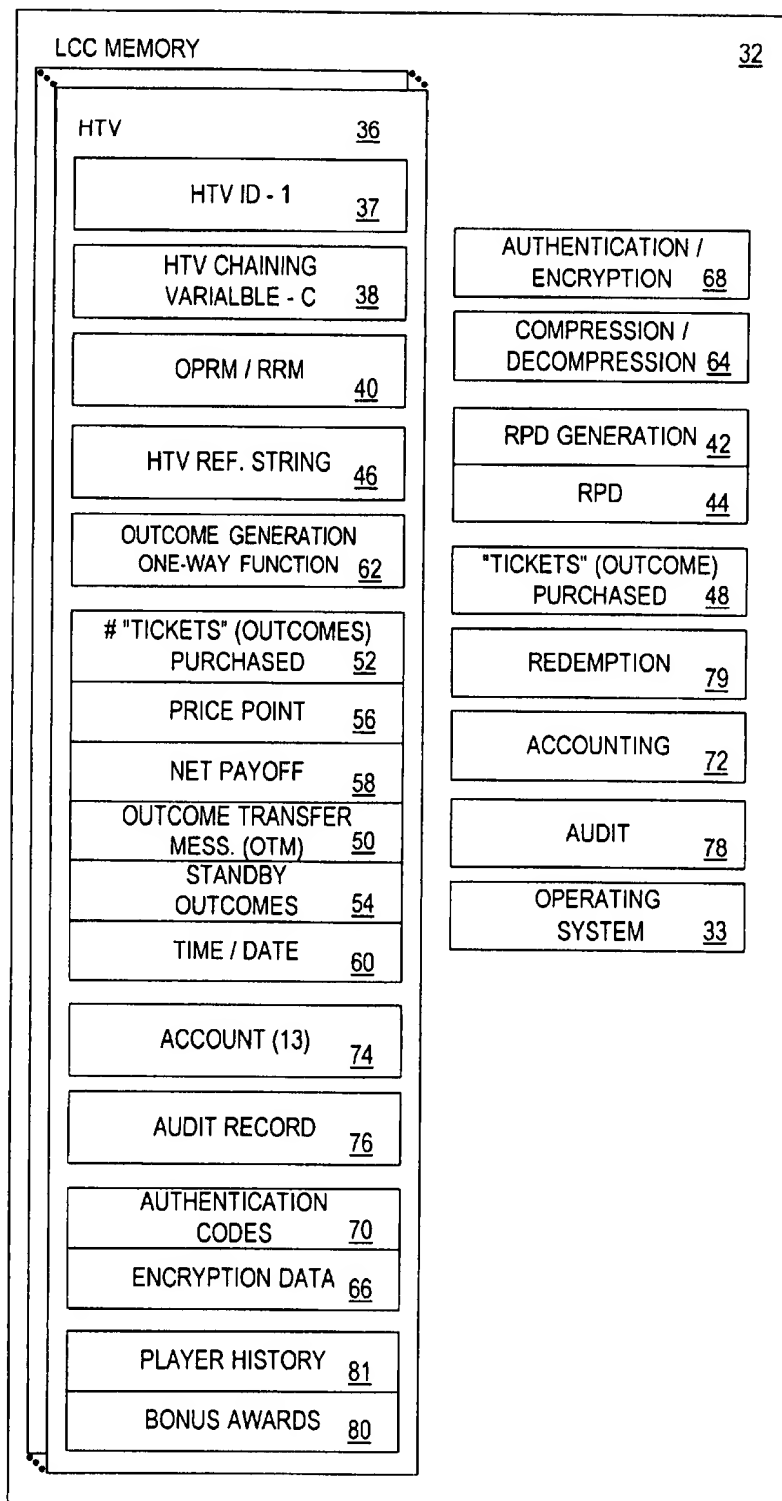


FIG. 3

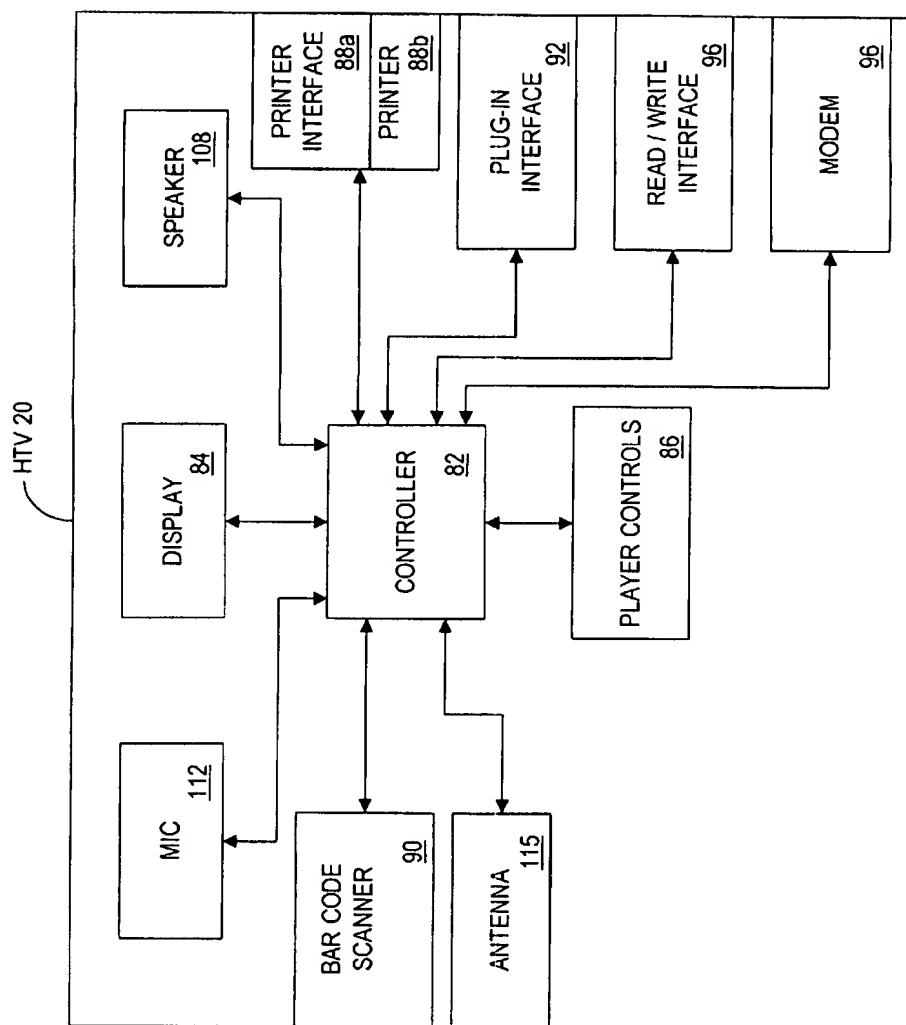


FIG. 4

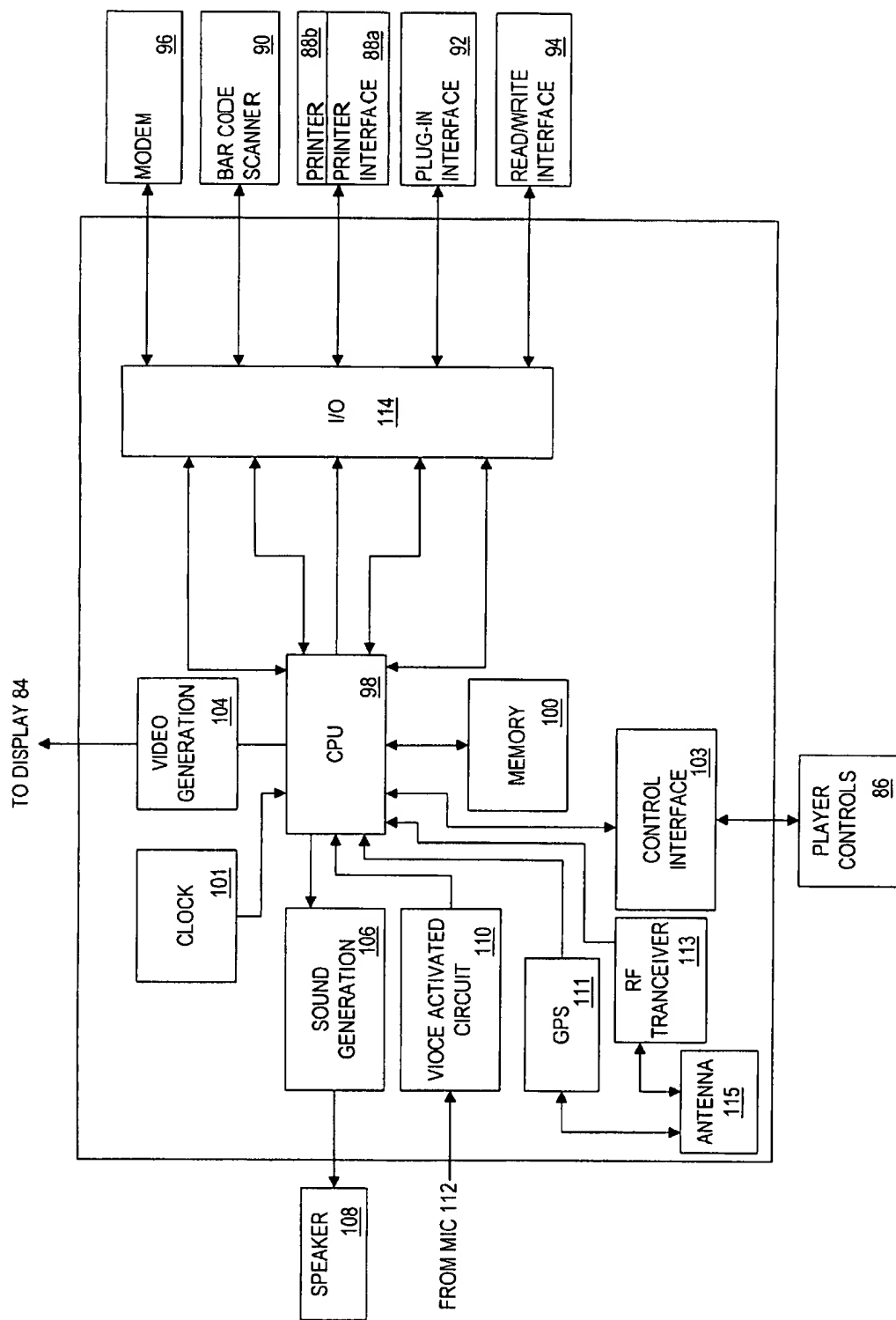


FIG. 5

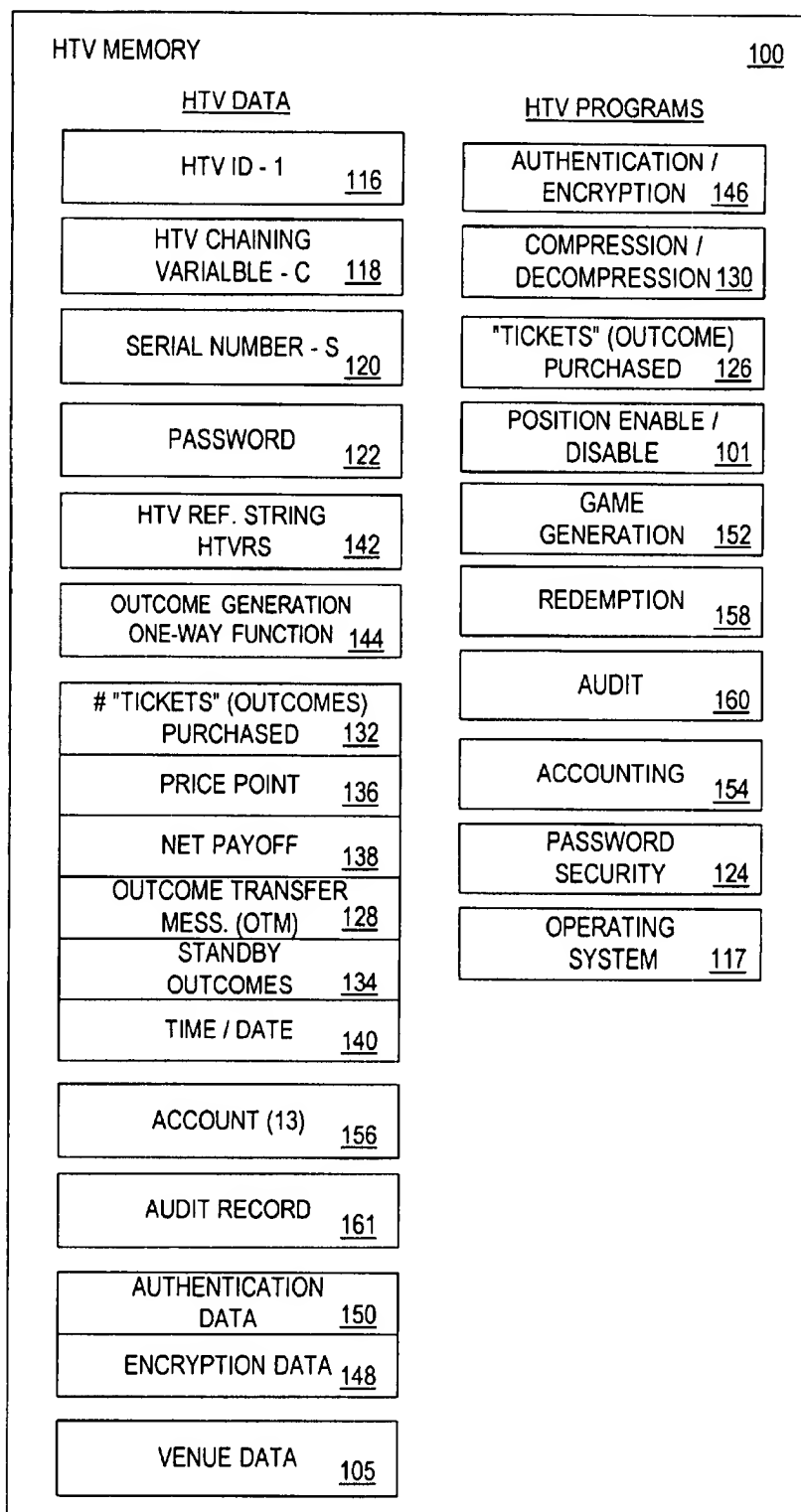


FIG. 6

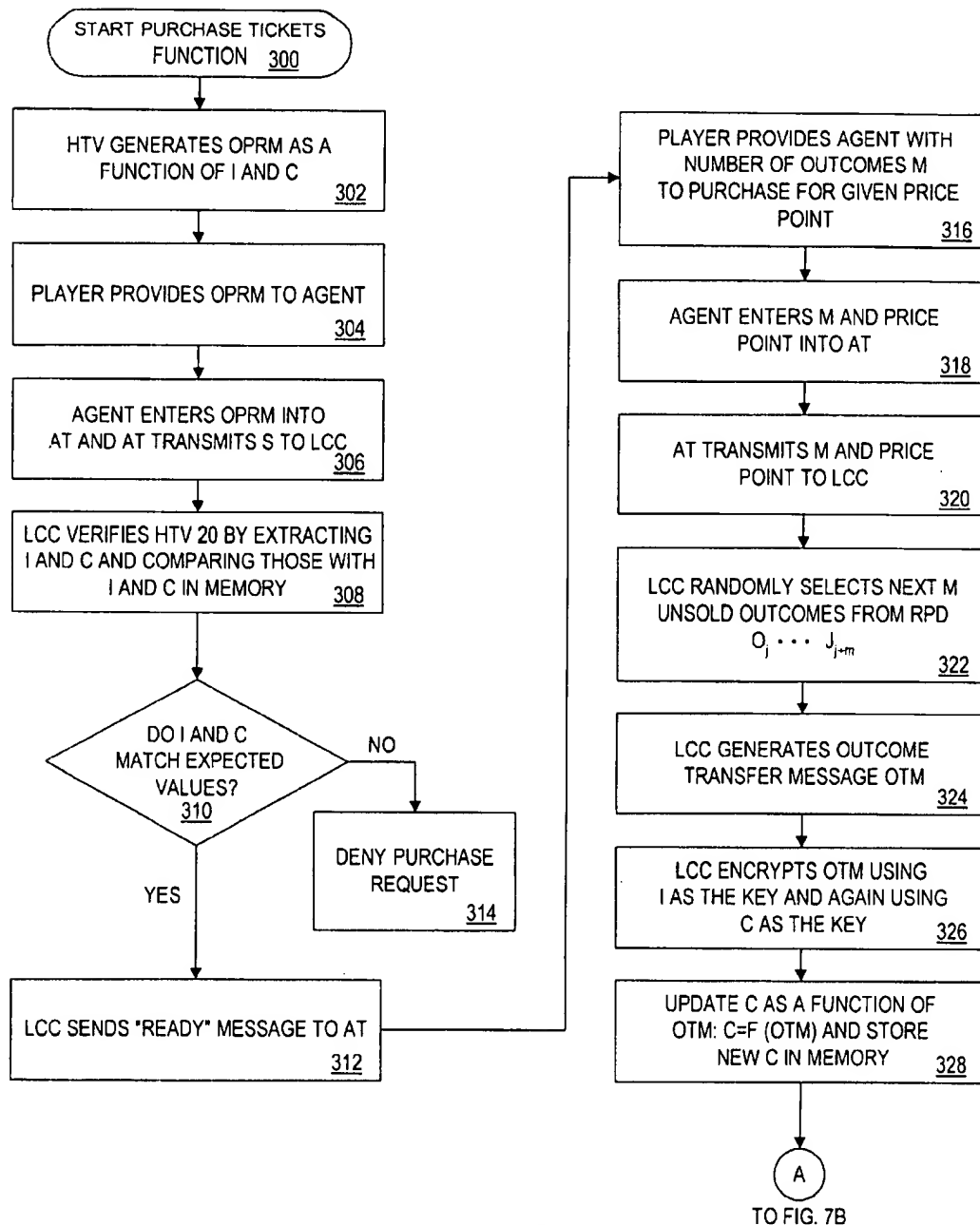


FIG. 7A

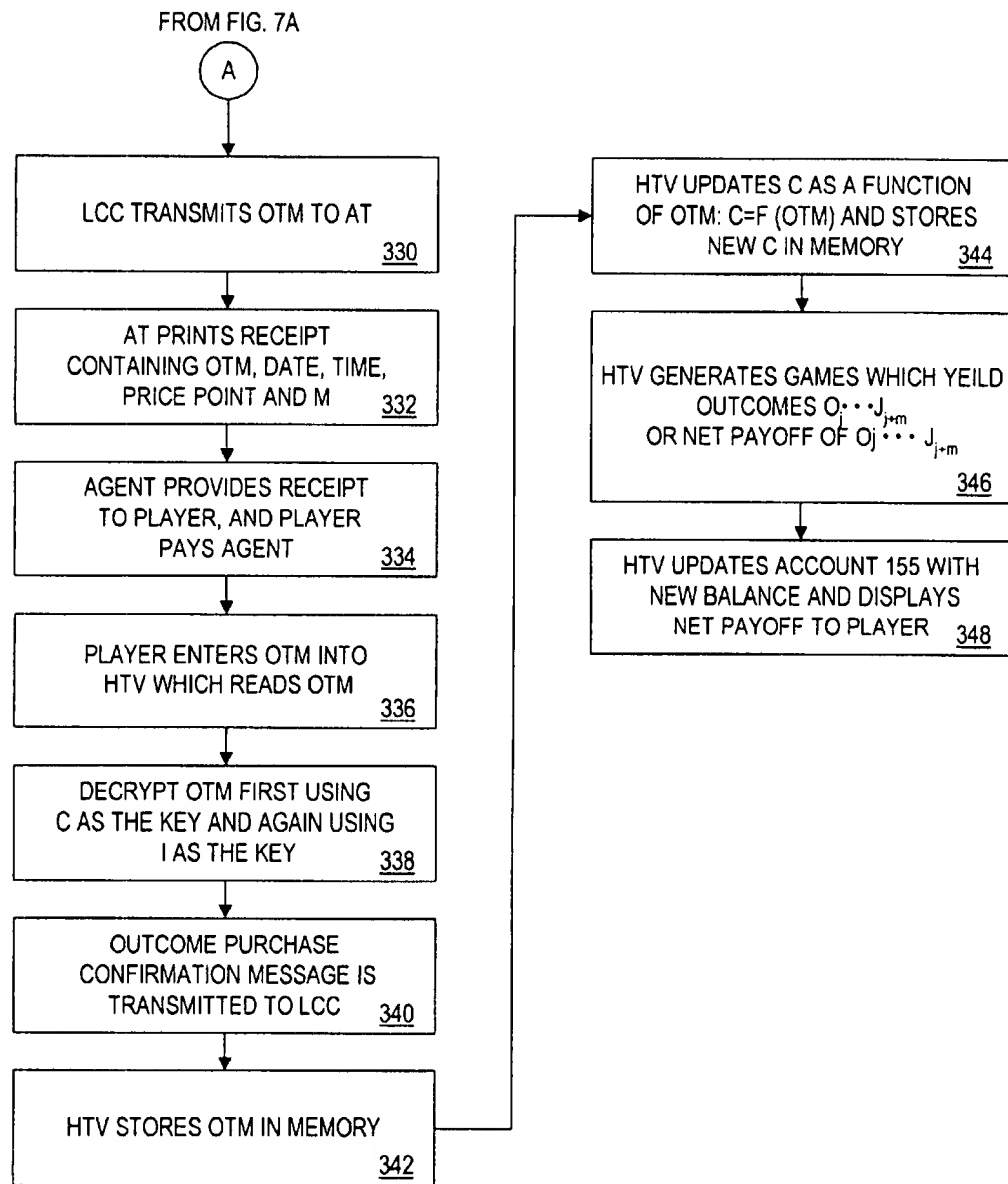


FIG. 7B

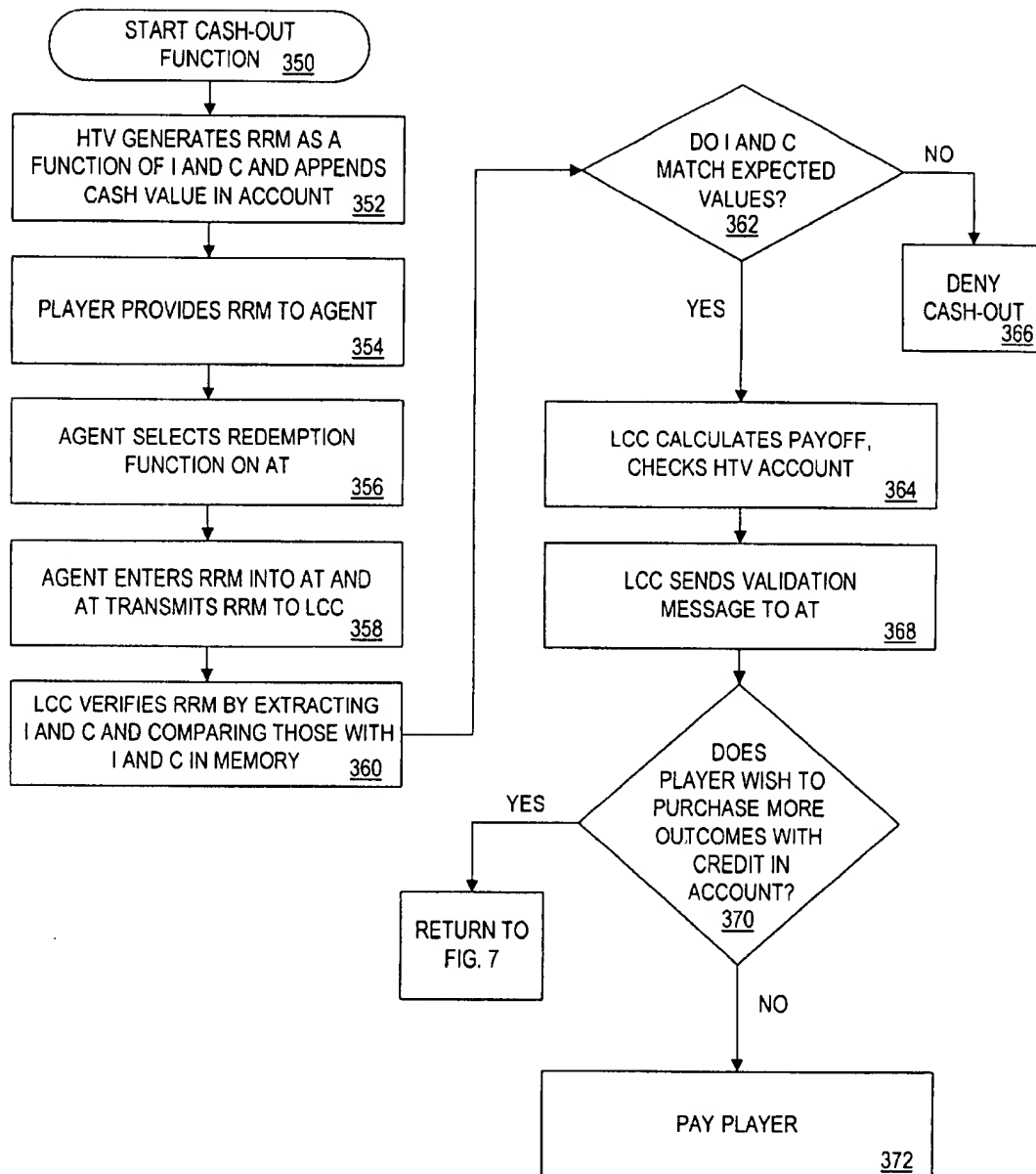


FIG. 8

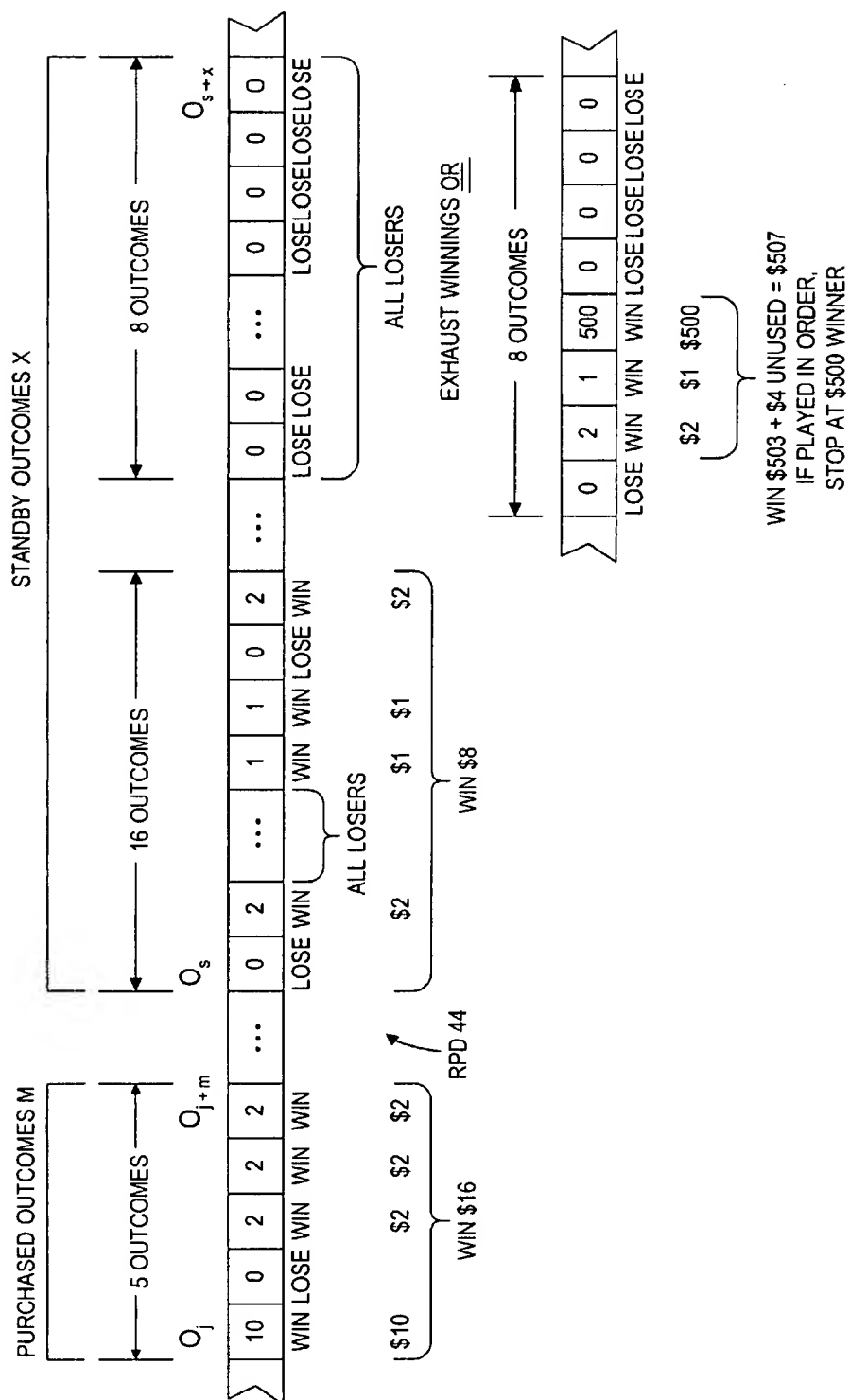


FIG. 9

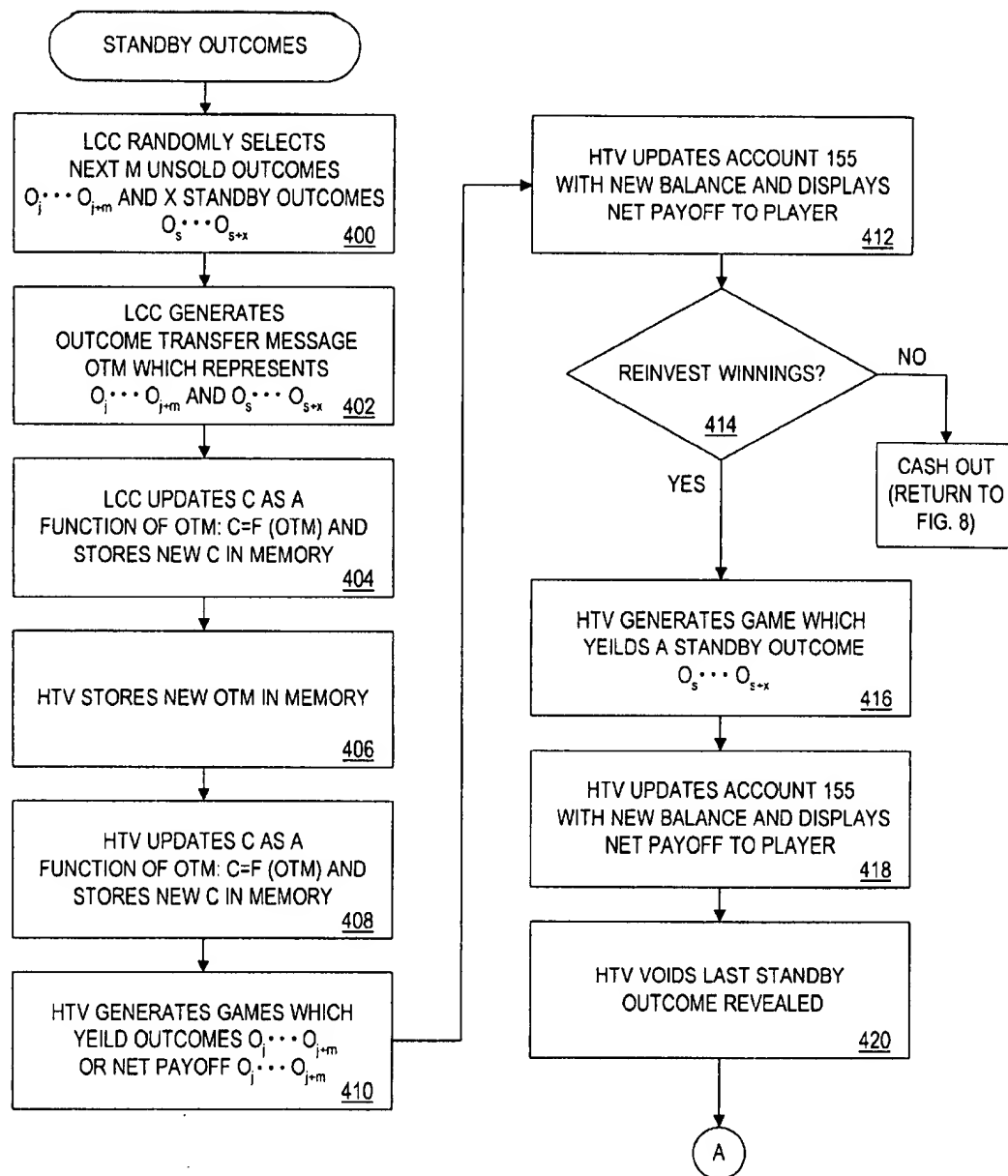


FIG. 10A

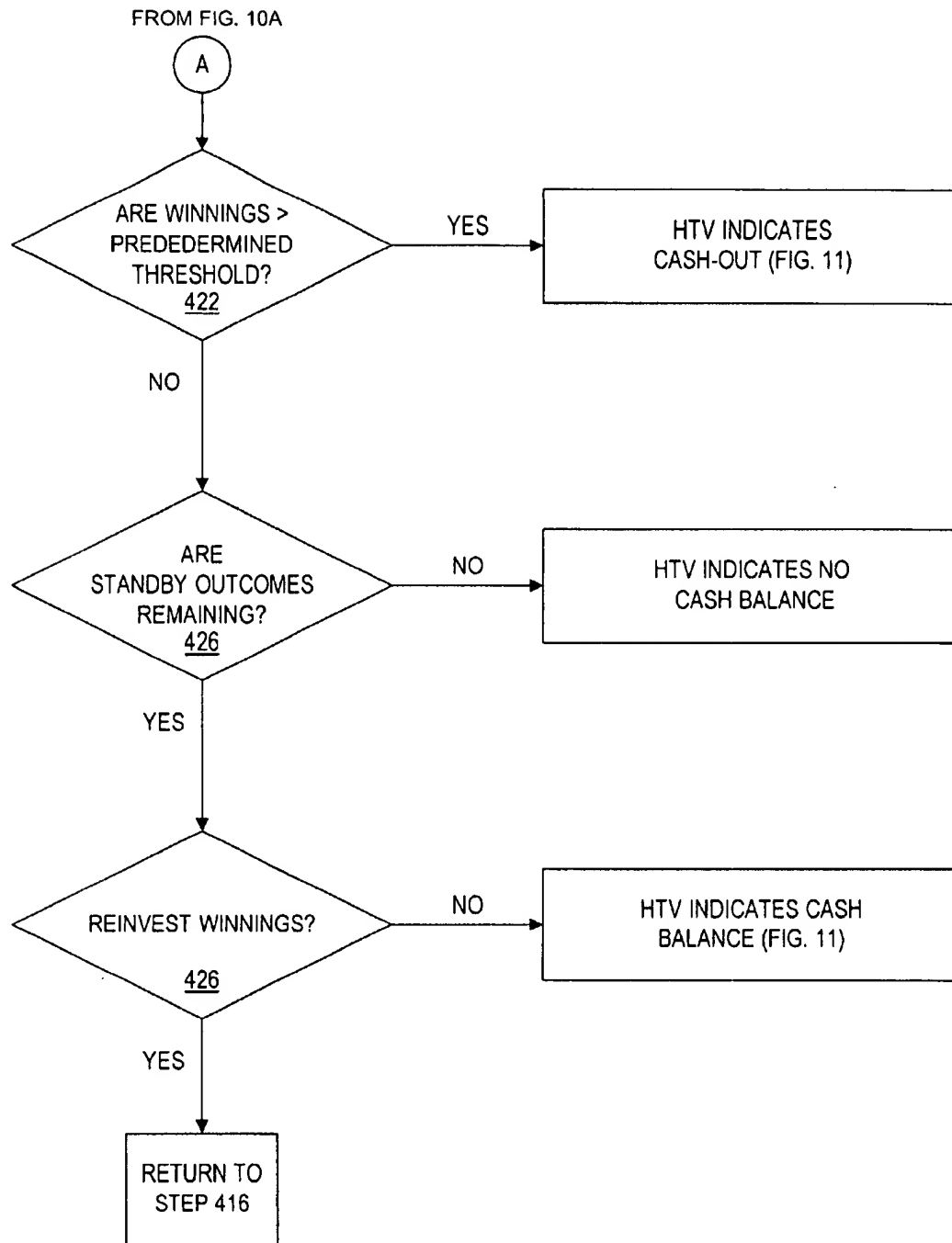


FIG. 10B

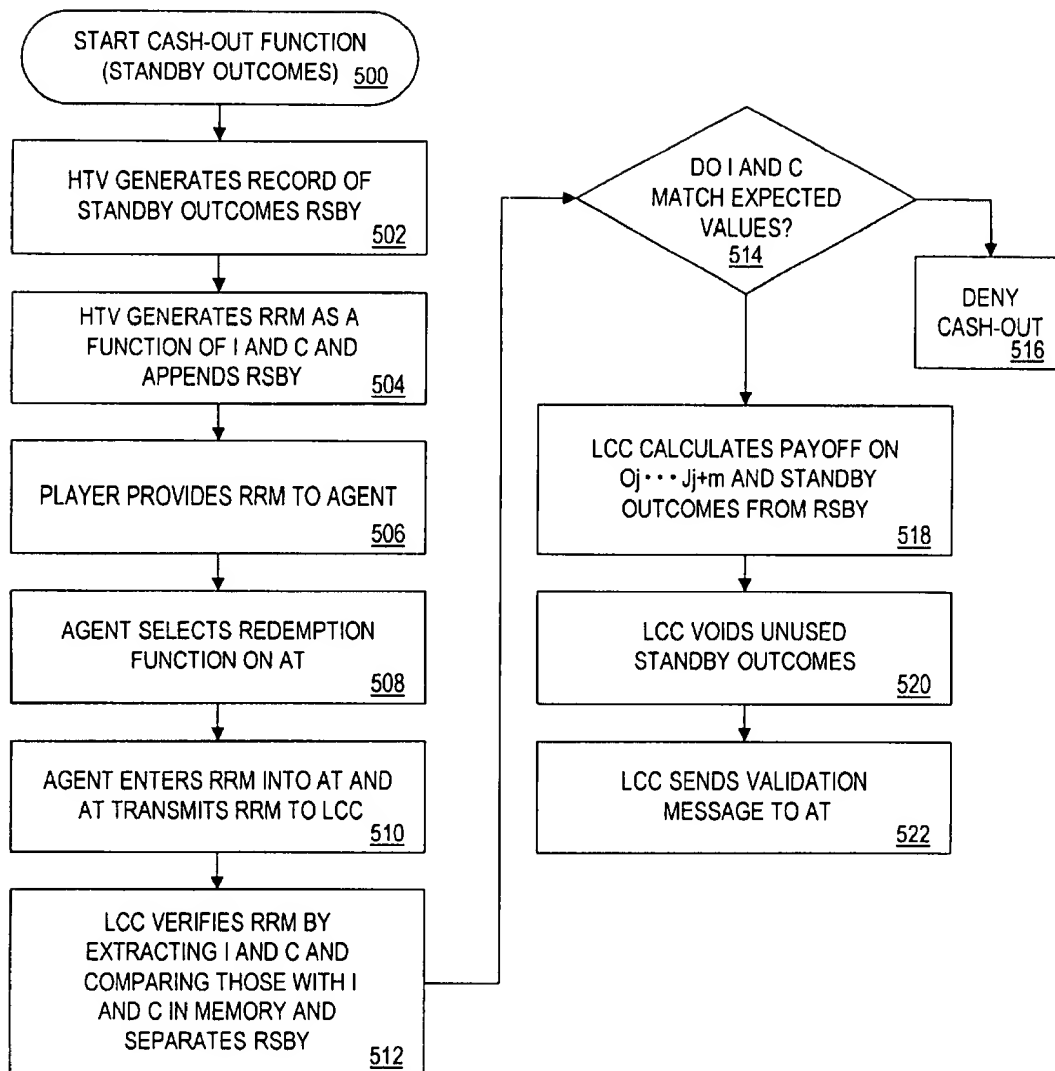


FIG. 11

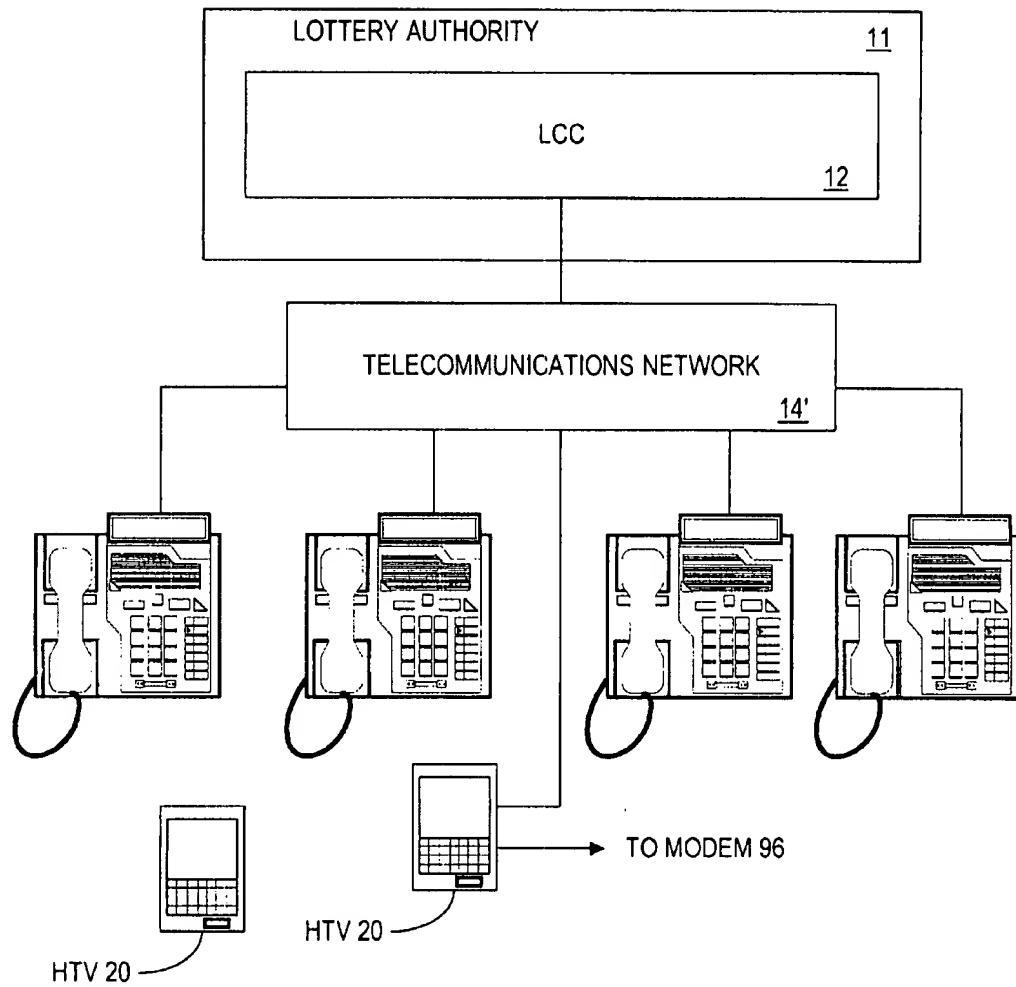


FIG. 12

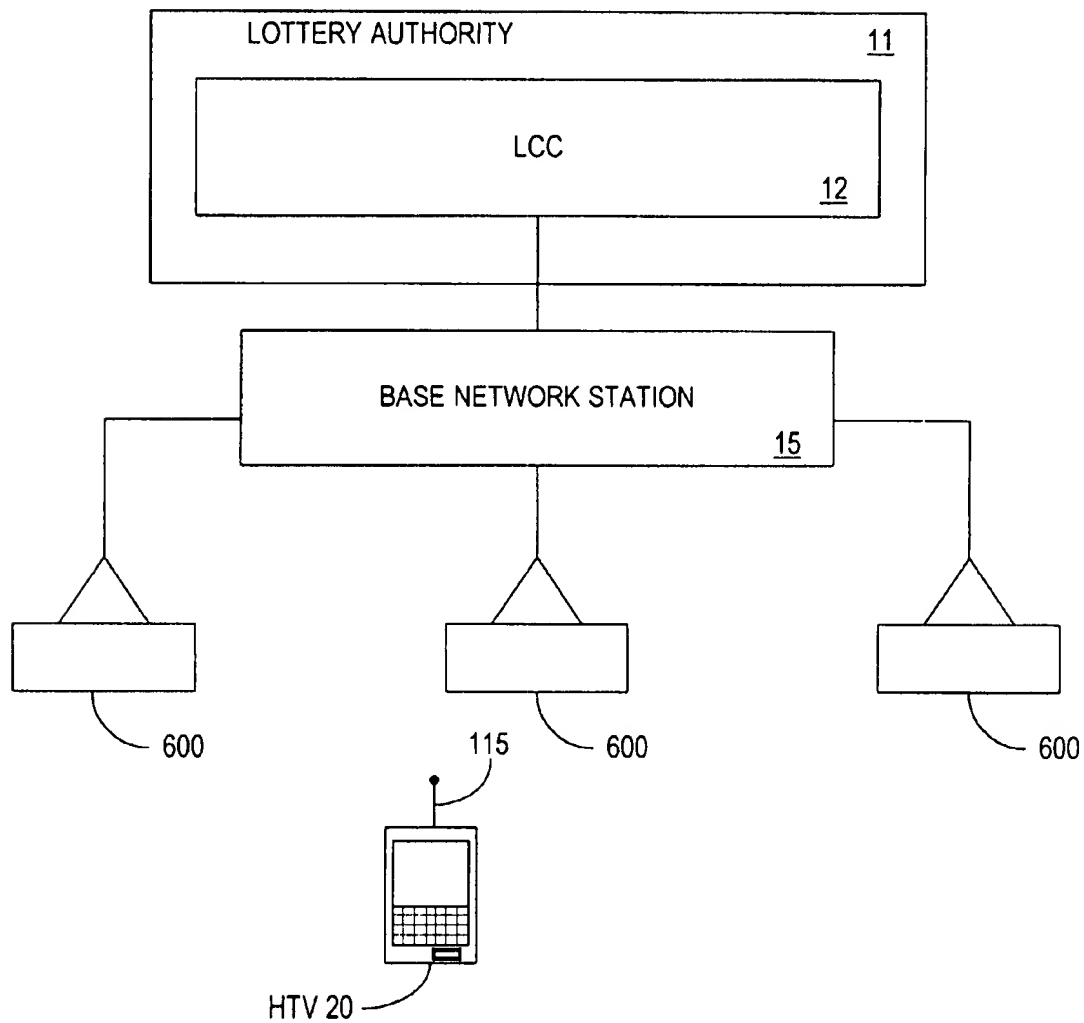


FIG. 13

OFF-LINE REMOTE SYSTEM FOR LOTTERIES AND GAMES OF SKILL

This application is a continuation of U.S. Pat. application Ser. No. 08/624,998 filed on Mar. 29, 1996 for OFF-LINE REMOTE SYSTEM FOR LOTTERIES AND GAMES OF SKILL; which issued as U.S. Pat. No. 5,871,398; which is a continuation-in-part of now abandoned U.S. Pat. application Ser. No. 08/497,080 for OFF-LINE REMOTE LOTTERY SYSTEM, filed Jun. 30, 1995.

BACKGROUND

The present invention relates generally to remote gaming systems, and more particularly, to an off-line system for playing games of chance, including instant-type lottery games typically embodied in a ticket having multiple chances which represent a single predetermined outcome offered by a managing authority are rendered on a gaming computer as an "electronic ticket," such as, for example, a dedicated hand-held device or programmed general personal computer. In addition, the present invention provides for playing games of skill on such a device. In a lottery application, the system enables a player to play instant-type tickets on the game computer with the same convenience as typical paper scratch-off tickets at any location without the gaming computer ever having to be physically or electronically connected to a lottery system network during play, thereby providing enhanced play value for the player and greater revenues for the managing authority.

In the case of typical paper instant tickets, a computer generates a randomized prize data stream comprised of a finite series of win/lose outcomes. Each outcome is assigned to a lottery ticket, and each ticket contains one or more game chances which yield the assigned outcome. The player cannot change the ticket outcome, he or she merely scratches off certain areas of the ticket in accordance with the rules of the game to reveal the outcome. The ticket contains indicia which provide the player with a means to determine win/lose results or prize status, and the type of prize (e.g., cash or a free ticket). The aggregate of all winning outcomes in any randomized prize data stream is a predetermined percentage payout of the total revenues that would be generated by the sale of all of the tickets incorporating that particular randomized prize data stream.

In one specific embodiment of prior art paper instant ticket systems, ticket outcomes are generated by the computer tapes that control printing of the tickets. These tapes contain each outcome for any given run of tickets. The outcomes are created using essentially similar methods throughout the industry. For example, a run of 24 million tickets that has 120 top payouts of \$10,000 and a payout percentage of 55%, may be broken up into 100 blocks of 240,000 tickets each. The \$10,000 winners will be distributed as evenly as possible among the 100 blocks, so there will be at least one top prize in each block, with 20 blocks having two top prizes. The 80 blocks without the two top prizes will be compensated by offering more low and mid-tier prizes, so that the payout percentage is exactly 55% for each 240,000 ticket block. Each of these 240,000 ticket blocks is broken up into books of tickets, typically 200 to 400 tickets per book. Tickets are delivered to retailers in book units, where each ticket has two identifying numbers, a book/ticket number and a validation number. The book/ticket number is usually printed on the back of the ticket. An exemplary book ticket number is "089-46127-234." The "089" identifies the game, in this case a State X \$3 "Win for

Life." The "46127" is the book number, which in this case means that this ticket is from book number 46127. The "234" identifies this ticket as the 234th ticket from this book. The validation number is printed under the latex surface on the front of the ticket. This number is the key to determining whether or not the ticket is a winner. When a winning ticket is presented for prize redemption, the retailer types this number into an agent terminal, from which access to a central database of instant tickets provided by the ticket printer is obtained to search the record of outcomes for that run of tickets. This database resides in a separate computer at the main computer center of the online service provider (such as GTECH).

To prevent fraud, the validation number cannot be seen without scratching off the latex covering material. If the validation number were visible without requiring that the latex be removed first, retailers could check whether or not each ticket was a winner, and then keep winning tickets for themselves, selling only the losing tickets to customers. In this connection, the validation number is typically comprised of nine (9) digits. An illustrative validation number for the above "Win for Life" ticket is: 71069-7041. This number singularly identifies this ticket from the millions of tickets that are printed for that game. It is important to note that this number is encoded and not in sequential order. If the latter was the case, retailers could buy one ticket for themselves and check its validation number. They could then enter the next ten validation numbers into the online system to determine whether any were winners. Again, customers might be sold the losing tickets while the retailer kept the winners. Encryption prevents this, because knowing one validation number provides the retailer with no information about the next number.

Some lotteries place restrictions on the distribution of outcomes, including limits on the number of high tier winners per book; how many consecutive non-winning tickets Y% of the time; and the maximum number of non-winning tickets per row. In arranging the lottery, the authority decides how many tickets are to be sold, the payback percentage of the game as a whole, and what prizes will be awarded and the frequency of winning tickets among the total number of tickets. For example, if the lottery wanted to sell a total of 20 tickets and have a payout percentage for the game of 50%, they might need to pay \$10 total for the game. This might consist of one \$5 winner, one \$2 winner, and three \$1 winners and may be represented as: 5, 2, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0. Note that the process so far has been completely deterministic. There is no randomness at all. Of course the lottery does not want to have the first five tickets sold to be winners, so it randomizes the order of the tickets. The resulting sequence might look like the following: 0, 0, 0, 0, 0, 1, 0, 2, 0, 0, 5, 0, 0, 0, 0, 1, 0, 0, 0, 1. As tickets are requested by players, they are removed from the sequence of outcomes. From the above set of outcomes, a player requesting four tickets might buy four losers—0, 0, 0, 0. If the next player requested three tickets, he or she may get 0,1,0. The next three tickets sold might be 2,0,0. This process continues until the entire sequence of outcomes is exhausted. Of course the computer can also pull outcome requests from the game sequence at random, so that a request for three outcomes could get the outcomes in location 5, 8, and 11 (which might correspond to 0,2,5). These outcomes would then be eliminated from the game sequence so that the next player cannot get the same sequence.

The lottery ticket may also contain a batch number that is typically visible on the ticket in the form of a bar code. All

tickets in a given master carton are part of the same ticket lot and are sold at the same price point. Each master carton is labeled with a unique master carton serial number which is tracked by a central management computer associated with the managing authority. The central management computer also stores every ticket serial number and the associated outcome for that ticket. When the instant tickets are to be sold to customers, the lottery retailer communicates the master carton serial number via his on-line agent terminal to the central management computer and thereby activates all of the paper instant tickets in each master carton. This action activates all of the ticket serial numbers in that master carton, and typically causes the lottery retailer's lottery bank account to be automatically debited for the wholesale cost of that master carton within a specified time period.

To redeem a winning paper lottery ticket, the player presents the same to a redeeming agent, either at a lottery retailer or lottery office, or mails the ticket in for redemption. To effectuate the redemption process, the redeeming agent scans the bar code on the ticket which represents the batch serial number on the ticket through a bar code scanner associated with the agent terminal. The ticket agent also enters the ticket serial number into the agent terminal. These ticket serial numbers are transmitted to the central management computer for purposes of validation. When the central management computer receives a validation request, it activates an on-line validation program which queries a ticket value database using the particular ticket and batch serial numbers to confirm that the ticket came from an activated master carton. If the ticket value database confirms a payout, the validation program authorizes the lottery retailer to pay the player cash or provide another prize (e.g., a free ticket).

In other paper instant ticket systems, there is no central management computer that manages the system from a purchase and redemption standpoint. The lottery retailer simply buys tickets from a printer, resells them to players, and then handles all aspects of validation and payment of winnings.

All prior art paper instant ticket systems suffer from several drawbacks. These include the costs of printing tickets, the physical inventory costs, the costs to the managing authority and retailer associated with unsold tickets, the inability to effectively offer low-price games (e.g., \$0.25, \$0.10), the limited game choices for the player, and the stigma associated with paper tickets as appealing toward lower income players, among others.

As an alternative to instant paper tickets, systems have been devised which replicate instant tickets on a computer terminal or gaming machine. An example is shown in U.S. Pat. No. 5,324,035, which discloses an on-line video gaming system comprised of a plurality of slave terminals, a plurality of master processing units, and a central game processor. A plurality of slave terminals are networked to each master processing unit and all of the master processing units are networked to the central game processor. The central game processor downloads fixed pools of game plays to each master processing unit. The slave terminals request game plays from the fixed pool in the master processing unit. The group of slave terminals coupled to a particular master processing unit display indications of the chances of purchasing one of the remaining winning plays in that pool to provide an element of competition between players situated at the various slave terminals. Thus, players at each slave terminal may decide to wait for the odds of purchasing a winning play to increase by allowing other competitors to purchase some of the remaining non-winning plays. Although this system is capable of rendering instant paper

tickets in a video format, its primary drawback is that it is a networked on-line system. Every play (outcome) requested by the slave terminal must be downloaded on-line from the master processing unit. Accordingly, this system is limited in that players can only engage in lottery play at specified locations.

Another on-line video gaming system is disclosed in U.S. Pat. No. 4,652,998. This system comprises a plurality of remote terminals networked to a central controller which generates a prize pool based upon a pool seed which is fed to a random number generator. The central controller divides the prize pool into mini-pools, each of which has a known amount of low-end prize value (e.g., all prizes of \$25 or less). There are a selected number of larger prizes which are distributed among the mini-pools where some mini-pools have a large prize and some have none. Mini-pools are assigned to each terminal for each game which is rendered on the terminal as needed. The remote terminals have means for randomizing each mini-pool assigned to the terminal using a mini-pool seed provided by the central controller to feed a random number generator using a randomizing algorithm. When the central processor has assigned all mini-pools within a pool, the central processor creates a new pool. After players have played a sufficient number of games to exhaust an entire mini-pool at a given remote terminal, it connects to the central controller and is assigned a new mini-pool. This system also has significant limitations. Because the prize structure in the mini-pools is assigned to each remote terminal in a "dynamic state", i.e., the remote terminal is assigned active outcomes before a player engages in play, it is necessary to provide various security measures in the remote terminals to prevent an unscrupulous player from "looking ahead" by "hacking" the machine and determining the outcome sequence in any given mini-pool. Otherwise, a player might learn at what point in the mini-pool a large win will occur for the game being played and then wait to play until when a favorable outcome is due to occur. This characteristic renders such a system vulnerable to hacking since a player could conceivably view the outcomes stored in the device prior to purchase.

It is therefore desirable to provide an off-line system in which a player can enjoy games having a predefined outcome determined by a managing authority or the like on a gaming device, without the need to be physically or electronically linked to a central management computer associated with the managing authority during play, where "ticket" purchase and redemption of winnings may be done at virtually any location, and where the managing authority is not at risk of being cheated since there are no secrets stored in the device.

SUMMARY OF THE INVENTION

Accordingly, it is a primary object of the present invention to provide a lottery system whereby instant "tickets" or pseudo-choice games with a predetermined outcome can be rendered on a remote gaming computer (the gaming computer may be any personal computer, personal digital assistant or the like, but will be referred to herein as a hand-held ticket viewer "HTV") to enable a player to participate in a lottery or play lottery-type games for prizes at any location, all the while providing enhanced play value through computer simulation of games on the HTV.

It is a further object of the present invention to provide a lottery system which allows for replicating game outcomes on an HTV where the outcomes are predetermined prior to purchase by and stored in a record in a central management

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computer ("CMC") for the target HTV, thereby eliminating the need for security in the HTV.

It is yet another object of the present invention to provide a lottery system which enables predetermined game outcomes to be rendered on an HTV, yet where prize redemption can be implemented at a retailer in the same manner and with the same convenience as instant scratch-off lottery paper tickets.

It is a further object of the present invention to provide a lottery system which confers portability of purchase and redemption via any interactive communications or data network.

It is another object of the present invention to provide a lottery system which provides a managing authority with increased sales and profits, players with more competitive entertainment alternatives and overall higher customer satisfaction.

It is a further object of the present invention to provide a lottery system which eliminates the printing costs, inventory costs and cash flow delays typically associated with instant paper tickets.

It is a further object of the present invention to provide a lottery system which eliminates the disposal costs associated with paper instant tickets.

It is yet another object of the present invention to provide a lottery system in which an HTV provides for increased play value through longer play times than what is possible with instant paper tickets.

It is yet another object of the present invention to provide a lottery system in which games rendered on an HTV may be generated in a large type option which presents larger game formats to make it easier for people with poor vision to play the games.

It is another object of the present invention to provide a lottery system which allows for venue expansion through sales of instant ticket type games in venues where sales of paper tickets are impractical such as in restaurants and the like.

It is still another object of the present invention to provide a lottery system in which game tutorials and help screens on an HTV enable players to learn new lottery games.

It is yet another object of the present invention to provide a lottery system in which games are rendered on an HTV and the machine communicates a winning outcome to the player.

It is a further object of the present invention to provide a lottery system in which new lottery games may be transferred to an HTV through a plug-in module.

It is still another object of the present invention to provide a lottery system in which the managing authority can inexpensively test new games and obtain user feedback by transferring new games for user sampling to an HTV through a plug-in module.

It is yet another object of the present invention to provide a lottery system in which advertising in connection with any lottery game may be transferred to and rendered on an HTV.

It is a another object of the present invention to provide a lottery system in which games that are races of skill, such as crossword puzzles or word descrambler games that must be completed in a certain period of time and which have a known correct solution, are rendered on an HTV.

It is a further object of the present invention to provide a lottery system which realizes increased lottery sales and player game value by providing for the optional reinvestment of winnings by the player in connection with an original "ticket" purchase on an HTV.

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It is yet another object of the present invention to provide a lottery system which allows for a managing authority to track players and various attributes of their play, such as, for example, play frequency, betting level, type of games played and the like, to utilize such information to provide various bonus awards and incentives.

It is still another object of the present invention to provide a lottery system which reduces player fatigue by enabling a player to select from a plurality of games on an HTV irrespective of the predetermined outcomes purchased from the managing authority.

It is yet another object of the present invention to provide a lottery system that allows for a plurality of game authorizations/outcomes to be stored in the HTV at the time of manufacture.

It is still another object of the present invention to provide a lottery system in which game outcomes are randomly generated by the central management computer at the time of a purchase request.

It is yet another object of the present invention to provide a lottery system wherein game outcomes are generated in the HTV based upon a random seed value from the central management computer.

It is yet another object of the present invention to provide a lottery system in which a random string of outcomes are stored in the HTV and revealed in response to receipt of address data from the central management computer.

It is another object of the present invention to provide a lottery system in which the HTV enables games of skill to be played where the outcomes of the games are not immediately made known to the player but rather are determined by the central management computer upon receipt of game parameter data from the HTV.

It is still another object of the invention to provide a lottery system for playing probabilistic games of chance on an HTV.

It is a further object of the present invention to provide a lottery system which reduces ticket and validation costs for the managing authority through electronic batching and reduced claim "events."

It is another object of the present invention to provide a lottery system which makes instant ticket type lottery games attractive to a wider group of participants who enjoy playing games on machines and personal computers.

It is a further object of the present invention to provide a lottery system in which an HTV may be enabled for play and disabled in accordance with its location using a Global Positioning System ("GPS") receiver to facilitate in-flight gaming where the HTV may be prevented from operating unless it is located within a venue that allows for gaming.

In accordance with the foregoing objects and additional objects that will become apparent hereinafter, the present invention, in one exemplary embodiment, comprises a system for enabling games of chance for prizes on at least one remote game computer, where each game has at least one associated outcome that is predetermined by a central authority with an associated central management computer that authorizes game play on the remote game computer and provides for verification of the at least one outcome after game play by the central authority. The system generally comprises: at least one game computer including associated memory and processing means for executing at least one program from the associated memory, where the at least one program includes a game program. The processing means execute the game program to enable the player to play at

least one game on the game computer upon receipt of outcome and game authorization data pursuant to a purchase request, where the data represent either a single predetermined outcome or an aggregation of constituent outcomes. The game computer further includes authentication means operatively associated therewith for generating and authenticating authenticatable messages utilizing a variety of cryptographic and other protocols.

The invention further includes a central management computer having associated memory, processing means for executing at least one program from the central management computer associated memory, and central management computer authentication means operatively associated therewith for generating and authenticating authenticatable messages. The central management computer enables an authenticated session to communicate the data either via a direct electronic connection or a manually input data step to the game computer to enable the central management computer to authorize game play on the game computer while the game computer is not connected to any other device during play, and thereafter to enable prize redemption.

The present invention also contemplates a method for playing games of chance on at least one remote game computer, where each game has at least one outcome that is predetermined by a central gaming authority having an associated central management computer prior to game play, comprising the steps of:

- (a) identifying the game computer to the central management computer;
- (b) requesting a number of game authorizations from the central management computer;
- (c) the central management computer forming an authenticatable game authorization message representing at least one predetermined game outcome;
- (d) communicating the authenticatable game authorization message to the game computer after payment authorization for the authorized games by the player; and
- (e) the game computer authenticating the authenticatable game authorization message and, if authenticated, allowing the game computer to reveal the at least one predetermined outcome represented in the authenticatable game authorization message.

In another embodiment, the game computer associated memory stores an accumulated cash-balance of winnings, and the authenticatable game authorization message represents a predetermined number of game authorizations in connection with the purchase request, and further represents a predetermined number of standby game authorizations which are played by debiting the accumulated cash-balance.

In accordance with an illustrative embodiment of the invention, prize redemption of winnings associated with the authorized game plays comprises the following additional steps:

- (f) identifying the game computer to the central management computer;
- (g) the game computer generating an authenticatable redemption request message representing the at least one predetermined game outcome;
- (h) communicating the authenticatable redemption request message to the central management computer through at least one of a temporary direct electronic connection and a manually input data step; and
- (i) the central management computer authenticating the authenticatable redemption request message and verifying outcome data represented therein to outcome data

previously transmitted in said authenticatable game authorization message to authorize at least one of a payout of winnings and credit toward additional game authorizations.

The game computer may include an integral or external security token, where the security token comprises a tamper-resistant and/or evident secure perimeter including memory and processing means for executing programs from the secure perimeter memory. The secure perimeter includes the authentication means for generating and authenticating authenticatable messages, and generates the authenticatable redemption request message representing the outcome data in response to a prize redemption request.

The invention also contemplates an embodiment where the associated memory is loaded with at least one puzzle game, and where the game authorization data comprises an activation message broadcast via mass communication channels. This game authorization data enables the puzzle game to be started after at least one of a certain temporal threshold and an external occurrence. Thus, many players can play a race of skill simultaneously with the first player to complete the game being declared the winner. The authenticatable redemption request message represents a player's solution to the puzzle, and the player's solution and time of completion are verified at said central management computer.

The game computer may generate a hash value of a player's solution to the puzzle game, where a hash value representing a correct puzzle solution for said puzzle is compared to said player's solution at the central management computer.

The game computer may also include provisions for digitally time stamping the hash value, where the means for time stamping are disposed within a tamper-resistant secure perimeter to preclude fraud.

The present invention also provides a method for enabling off-line games of skill for prizes on at least one remote game computer, where the player's game input does not produce a game outcome until the game input is processed by a central management computer, comprising the steps of:

- (a) the central management computer forming an authenticatable game authorization message for enabling play of at least one game of skill on the game computer;
- (b) at least one of communicating the authenticatable game authorization message and inputting the authenticatable game authorization message to the game computer through at least one of a direct electronic connection and a manually input data step;
- (c) generating at least one game of skill on the game computer while the game computer is not connected to any other device during play;
- (d) communicating player game input data to the central management computer through at least one of a direct electronic connection and a manually input data step;
- (e) the central management computer reading the player game input data and executing a program to produce at least one game outcome based upon the player's game input data; and
- (f) notifying the player of said at least one game outcome.

The present invention also provides a method for enabling play of probabilistic games of chance on at least one remote game computer, where each game has a plurality of chances to win that are selectable by the player on the remote game computer, the player selecting at least one of the chances and the player's selection being verifiable by a central authority with an associated central management computer that authorizes game play on the remote game computer, comprising the steps of:

- (a) identifying the game computer to the central management computer;
 - (b) requesting a number of game authorizations from the central management computer;
 - (c) the central management computer forming an authenticatable game authorization message representing a plurality of chances to win, at least one of which is selectable by the player for subsequent verification by the central management computer;
 - (d) communicating the authenticatable game authorization message to the game computer after payment authorization for the authorized games by the player; and
 - (e) the game computer authenticating the authenticatable game authorization message and, if authenticated, allowing the game computer to display the plurality of chances to win for selection by the player.
- Redemption of winnings associated with this embodiment further comprises the steps of:
- (f) identifying the game computer to the central management computer;
 - (g) the game computer generating an authenticatable redemption request message representing the selection by the player;
 - (h) communicating the authenticatable redemption request message to the central management computer through at least one of a temporary direct electronic connection and a manually input data step; and
 - (i) the central management computer authenticating the authenticatable redemption request message and verifying the selection by the player represented therein to authorize at least one of a payout of winnings and credit toward additional game authorizations.
- These and other features and advantages of the present invention will be better understood with specific reference to the detailed description which follows and the appended drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

- FIG. 1 is a schematic of the remote lottery system showing an CMC, ATs and HTV in a first embodiment;
- FIG. 2 is a block diagram of the CMC;
- FIG. 3 is a diagram of an exemplary memory arrangement in the CMC;
- FIG. 4 is a block diagram of the components in an HTV;
- FIG. 5 is a block diagram of the controller in the HTV;
- FIG. 6 is a diagram of an exemplary memory arrangement in the HTV;
- FIG. 7 is a flow chart of an exemplary outcome/game authorization purchase;
- FIG. 8 is a flow chart of an exemplary prize redemption sequence;
- FIG. 9 is a schematic of a random prize data stream showing an example of purchased and standby outcomes;
- FIG. 10 is a schematic of an embodiment for playing probabilistic games of chance;
- FIG. 11 is a schematic of an embodiment for playing games of skill where the outcomes are not immediately made available to the player but rather are computed by the central management computer;
- FIG. 12 is a schematic of an alternative embodiment of the invention; and
- FIG. 13 is a schematic of another alternative embodiment of the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the several views of the drawings, there is depicted an off-line system for playing games of skill and games of chance, including lottery games, generally characterized in a first embodiment by the reference numeral 10, and principally comprised of a managing authority 11 having a central management computer CMC 12, a telecommunications network 14 which provides remote terminal access to the CMC 12, a plurality of agent terminals (AT) 16 associated with various retailers 18, and a plurality of HTV units 20 which enable game play. The term "managing authority" is used in the general sense and is intended to include any central authority, including any agents thereof which oversees and administers tournaments of skill and/or any wagering authority which sells no choice (e.g., scratch-off lottery tickets, bingo or a sweepstakes) or pseudo-choice (e.g., video poker) games or races of skill having a known correct solution if the player plays correctly. The term "retailers" includes any participating merchant where an AT 16 is located. As described in the foregoing, a "ticket" as used herein means a single net outcome or payoff. This outcome may constitute an aggregation of outcomes; the important aspect being that the CMC 12 has a record of the outcomes sold in any purchase transaction for future verification of prizes/winnings, just as with the current practice of selling instant-type lottery tickets. Thus, the player is essentially purchasing outcomes/game authorizations from the CMC 12. These are transferred to the HTV 20 and may be revealed through various games generated thereon.

The word "game" as used herein is intended to include the graphic rendition of, for example, an instant scratch-off type lottery ticket on the display screen of the HTV 20 or any other device having an electronic display.

In one exemplary embodiment, the player goes to a retailer 11 for purchase and redemption. As will be explained in more detail below, however, it is anticipated that the CMC 12 and AT 16 may be combined into a single unit or even into a system which enables outcomes/game authorizations to be purchased over the telephone or any interactive communications network. Alternatively, outcomes/game authorizations could be purchased through RF communications between a transceiver associated with the CMC 12 and a transceiver associated with the HTV 20. These embodiments are described further below.

FIG. 1 is a schematic block diagram depicting an overview of the system components in the first embodiment. The CMC 12, telecommunications network 14 and ATs 16 are connected in similar fashion as those in the prior art used to dispense instant paper tickets. With respect to the present invention, each AT 16 may include a printer 22, bar code scanner or other scanning device 24, a communications interface 26 for physically coupling the HTV 20 to the AT 16 to electrically communicate data to and from the HTV 20 through a compatible communications interface 154 in the HTV 20, and/or a read/write interface 27 for reading and writing data to data memory media such as a smart card 28. These are used to transfer outcomes/game authorizations to the HTV 20 in the form of an authenticatable game authorization message AGAM and will be described in more detail below. The smart card 28 may also be used to update game programs in the HTV 20 to enable the generation of new games as desired. This capability allows new games to be inexpensively tested for market acceptance by players. The smart card 28 may also be used to transfer advertising information in connection with lotteries in general.

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FIG. 2 is a block diagram showing details of the CMC 12, which generally includes a CPU 30, memory 32, an I/O interface 34 for loading programs into memory 32, and a communications interface 35 for communicating through the network 14 with the ATs 16. The CMC 12 may also communicate through a base station network 15 with a plurality of base stations having transceivers for broadcasting and receiving RF signals to communicate messages directly between the CMC 12 and the HTV 20 in an alternative embodiment described below and illustrated in FIG. 13. The CMC has software or firmware (hereinafter referred to as "programs or routines" and "data") which are used to implement various functions in the system. FIG. 3 depicts an exemplary memory arrangement of programs and data stored in the CMC 12. Memory 32 includes an operating system 33 which controls the CMC 12 in a conventional manner and need not be described in detail. In the illustrative embodiment, the CMC 12 has a memory area or database 36 in memory 32 for each HTV 20 in which specific information is stored to enable the CMC 12 to assign outcomes/game authorizations to that HTV 20 and to keep track of what has been assigned to that HTV 20 to provide for the redemption of winnings and to ensure that the HTV 20 is a verified unit in connection with a given transaction. Data in memory 36 may be retrieved and updated as required in order to perform the desired functions. For purposes of convenience, the following description is directed to an HTV which is registered to a single player. However, it is anticipated that an HTV 20 may contain multiple accounts for different players where access to the HTV 20 is made available through different passwords. An HTV 20 must be initially registered with the managing authority 11 prior to use. In this connection, identification information is initially stored in memory 32 of the CMC 12. The identification information includes a unique unit identifier or HTV ID ("ID") stored in a field 37 and, optionally, a chaining or sequence variable ("SV") stored in a field 38. The SV may constitute a 64-bit identifier which is unique to each HTV 20. Similarly, the SV may constitute a 64-bit representation of the history of outcomes/game authorizations which have been purchased and transferred to the particular HTV 20. Accordingly, SV is updated in accordance with some predetermined protocol, such as for example, every time purchased outcomes/game authorizations are assigned to the particular HTV 20 as a one-way function of the outcomes/game authorizations purchased. Thus, the SV is unique to each HTV 20 because it is a record of all transactions at any point in time with respect to that HTV 20. In an exemplary embodiment, the SV is used as a way to prevent fraud by uniquely identifying the particular HTV 20 as a function of both I and SV during purchase and/or redemption transactions. The particular protocols are discussed in more detail below.

In this regard, a current record of outcomes/game authorizations for given purchases to a specified HTV 20 may be stored in field 40 in the HTV database 36 in CMC memory 32 as an audit trail. Thus, the CMC 12 can subsequently compare alleged or claimed outcomes/game authorizations to the ones stored in the memory of the CMC 12 (which are updated each time outcomes/game authorizations are sold to the HTV 20) in connection with the last transaction. This is one way in which the CMC 12 can verify the identity of the HTV 20.

The present invention employs various cryptographic protocols to prevent fraud, specifically to preclude players from cheating the system by making up prize redemption codes. In this regard, purchased outcomes/authorized games

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may be represented by an authenticatable game authorization message AGAM and prize redemption requests by an authenticatable redemption request message ARRM by using a variety of protocols, including: one-way hash functions (also known as compression functions, contraction functions, message digests, fingerprints, cryptographic checksums, data integrity checks (DICs), manipulation detection codes (MDCs), and data authentication codes (DACs)), one-way hash functions with encryption keys (also known as message authentication codes (MACs)), digital signatures, and the like, with an encryption/decryption module in the HTV 20 as described further below. The practice of using cryptographic protocols to ensure the integrity and security of messages is well known in the art and need not be described here in detail. For reference, one of ordinary skill in the art may refer to Bruce Schneier, *Applied Cryptography, Protocols, Algorithms, and Source Code In C*, (2d Ed, John Wiley & Sons, Inc., 1996). The encryption/decryption module contains algorithms and keys for encrypting, decrypting and/or authenticating messages. Examples of well-known cryptographic authentication protocols with regard to a prize redemption request where the CMC 12 verifies the claimed winnings are as follows:

Encryption:

Setup: CMC 12 and HTV 20 share a secret key.

1. HTV 20 encrypts outcome/game authorization data with the shared secret key to form an authenticatable redemption request message ARRM.
2. Communicate authenticatable redemption request message ARRM to CMC 12.
3. CMC 12 reads and decrypts the authenticatable redemption request message ARRM with the same key.
4. If the message is intelligible, then the CMC 12 accepts the redemption request as authentic.

*Encryption may be implemented with an algorithm such as DES (U.S. Government standard, specified in FIPS PUB 46). Encryption may utilize any of several algorithms known in the art such as IDEA, Blowfish, RC4, RC2, SAFER, etc. See *Applied Cryptography*.

Message Authentication Code:

Setup: CMC 12 and HTV 20 share a secret key.

1. HTV 20 hashes outcome/game authorization data with a MAC and the shared secret key to form an authenticatable redemption request message ARRM.
2. Communicate authenticatable redemption request message ARRM to CMC 12.
3. CMC 12 reads the ARRM and hashes the message with the shared secret key.
4. If the generated hash matches the received hash, the CMC 12 accepts the redemption request as authentic.

*Any of the MAC algorithms, such as, for example, DES, CBC and the like may be applied in this application.

Encryption with a Public Key

Setup: HTV 20 has a public-key/private key pair. The CMC 12 knows the HTV 20's public key.

1. HTV 20 encrypts outcome/game authorization data with the private key to form an authenticatable redemption request message ARRM.
2. Communicate authenticatable redemption request message ARRM to CMC 12.
3. CMC 12 decrypts the ARRM with the public key of the HTV 20.
4. If the message is intelligible, the CMC 12 accepts the redemption request as authentic. A sample algorithm for this procedure is RSA.

Signing with a Public Key

Setup: HTV 20 has a public-key/private key pair. The CMC 12 knows the HTV 20's public key.

1. The HTV 20 signs the outcome/game authorization data with the private key to form an authenticatable redemption request message ARRM.
2. Communicate authenticatable redemption request message ARRM to CMC 12.
3. CMC 12 verifies the signature using the message and the public key. The mathematics of verification indicates whether the outcome message is authentic.
4. If the outcome message is intelligible, then the CMC 12 accepts the outcome message as authentic.

There are several ways to ensure that an authenticatable redemption request message ARRM is "fresh" (i.e., it has not been used more than once). In the first, known as "challenge/reply", the CMC 12 generates a random or sequence number (also referred to as a "nonce") and communicates it to the HTV 20. The HTV 20 then incorporates this random number in the authenticatable redemption request message ARRM. If the random number received matches the random number just generated, the CMC 12 accepts the message as fresh, i.e., an old message would contain a different random number.

In another method, the HTV 20 includes the sequence number SV in the authenticatable redemption request message ARRM. The SV is then incremented by one every time the HTV 20 generates an authenticatable redemption request message ARRM. The CMC 12 stores the most recent sequence number in memory. It accepts the current outcome message if the sequence number received is one greater than the stored sequence number.

In yet another implementation, the HTV 20 includes the current time in the authenticatable redemption request message ARRM. The CMC 12 then checks the time associated with the authenticatable redemption request message ARRM against the time from the CMC's associated clock. If the times are within a prescribed window, the current outcome message is accepted as fresh.

In still another application, the HTV 20 includes a random number in the authenticatable redemption request message ARRM. The CMC 12 maintains a database of all random numbers received from the HTVs 12. If the new random number is not in that database, then the current authenticatable outcome message is accepted as fresh. If a time element is incorporated as well, then the CMC 12 only has to store a relatively small quantity of unexpired messages.

Turning now to the outcomes/game authorizations that are actually communicated to the HTV 20, they are predetermined in the sense that the CMC 12 knows exactly what has been transferred to a given HTV 20 in connection with any purchase. In order to facilitate outcome generation, the CMC 12 may include a program 42 for generating a random prize data stream ("RPD") 44; a pool containing a finite series of win/lose outcomes/game authorizations $O_1 \dots O_n$ (e.g., . . . win \$2, win \$2, lose, lose, win \$10, lose, lose . . . etc). In the case of lotteries, the aggregate of all winning outcomes/game authorizations in any RPD 44 is a predetermined percentage payout of the total revenues to be generated by the sale of all "tickets" represented by the outcomes/game authorizations in the RPD 44. However, the outcomes may be generated "on the fly" (i.e., contemporaneous with or simultaneous to a purchase request). In the illustrative situation where the RPD is determined in advance, when a purchase request is received, the CMC 12 utilizes a "ticket" (outcome) purchase routine 48 that randomly selects the

next m outcomes/game authorizations from the RPD 44 (and possibly "standby outcomes/game authorizations"— x to allow for reinvestment of winnings, this will be described below) to be assigned to a particular HTV 20. The outcome purchase routine 48 then directs the CMC 12 to generate an authenticatable game authorization message AGAM which is subsequently communicated to and read by the HTV 20 following one of the protocols described below. For auditing purposes, the outcome purchase routine 48 may also direct the CMC 12 to store transactional data in a record 40, including the outcomes/game authorizations m assigned in field 52, and the standby outcomes/game authorizations x assigned in field 54, and optionally, even the AGAM itself. Accompanying this data may be the price point for a given "ticket" (outcome) such as \$0.25, \$1, \$2, etc., in field 56, the net payoff in field 58, and the time/date in field 60. Thus, a record is generated in the CMC 12 for each transaction with a given HTV 20.

In one embodiment, each HTV 20 may be assigned a unique reference string ("HTVRS") which is stored in field 46. An identical HTVRS is stored in the particular HTV 20 as described below. The HTVRS is a random series of win/lose outcomes/game authorizations. When a purchase is made, the outcome purchase routine 48 directs the CMC 12 to find the same outcomes/game authorizations or a series of outcomes/game authorizations having the same net payoff in the HTVRS. These outcomes/game authorizations or the net payoff may be represented by one or more memory addresses in the HTVRS. The outcome purchase routine directs the CMC 12 to generate an authenticatable game authorization message AGAM which represents that address or addresses in the HTVRS. The HTV 20 can interpret the AGAM to find the same outcomes/game authorizations or a series of outcomes/game authorizations with the same net payoff in its very own HTVRS. This will be explained in more detail below.

Another way in which the CMC 12 can assign outcomes/game authorizations is through the use of a one-way function which utilizes a seed value to generate a sequence of outcomes/game authorizations that are selected from the RPD 44. The HTV memory area 36 in the CMC memory 32 includes such a one-way function in field 62. An identical one-way function is stored in the HTV 20 as described below. The seed value for this one-way function becomes part of an authenticatable game authorization message AGAM.

In the situation where codes are input manually into the HTV 20 and/or the AT 16 to facilitate game authorization purchase and subsequent prize redemption, the CMC 12 can compress the data representing the outcome sequence into a "smaller code" which is thereafter decompressed in the recipient device. Specifically, the CMC 12 may be configured with a compression/decompression routine 64 that takes a series of m outcomes/game authorizations $O_j \dots O_{j+m}$ which are selected by the outcome purchase routine 48, and compresses that sequence into a smaller variable which is then concatenated into the authenticatable game authorization message AGAM. As part of the compression process, the outcomes/game authorizations $O_j \dots O_{j+m}$ may be rearranged into any hierarchical order, i.e., number of losers, number of \$1 winners, number of \$2 winners, etc) if desired. This type of compression is useful in embodiments where the authenticatable game authorization message AGAM is printed on a receipt or rendered in the form of a bar code, to allow for manual data entry into the HTV 20 or by scanning the AGAM as described below. Compression is also useful in the telephone embodiment shown in FIG. 12 and

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described below where the player may communicate messages over the telephone in response to suitable prompts. It may likewise facilitate any of the other methods of transferring outcomes/game authorizations, such as for example, where the HTVRS address is transferred.

In another approach, the outcome purchase routine 48 can calculate the expected net payoff of the m outcomes/game authorizations $O_j \dots O_{j+m}$ and accordingly generate an authenticatable game authorization message AGAM which represents that net payoff. In response to this data, the HTV 20 can then randomly generate games which yield outcomes/game authorizations having that net payoff. This method is not suitable for standby outcomes/game authorizations.

In order to provide for added security in the system, the authenticatable game authorization message AGAM may be encrypted for secrecy using any of the protocols described above. What this means that the message is first made authenticatable and thereafter encrypted, for example, by using a private/public key pair. This prevents anyone without knowledge of the proper keys from decrypting the message and interpreting its contents. In one example, encryption/authentication keys that are known only to the CMC 12 and the target HTV 20 are stored in field 66. An authentication/encryption module or routine 68 provides for implementing the cryptographic protocols when communicating these messages to and from the CMC 12. Game authorization messages generated by the CMC 12 may be made authenticatable by, for example, using the following protocol. In response to a purchase request for a number of authorized games T_0 comprising outcomes $O_j \dots O_{j+m}$, the CMC 12 obtains the target HTV 20's authentication key K_A and forms $T_1 = \text{MAC}\{K_A\}(T_0, \text{CM})$ where CM is a challenge message generated by the target HTV 20 and (T_0, CM) represents T_0 concatenated with CM. Authentication and encryption data/keys may be stored in field 70.

Other programs resident in the CMC memory 32 include an accounting routine 72 which calculates and updates the winnings for each HTV 20 in an account 73 associated with memory area 40. The term "winnings" as utilized herein is intended to include money, reward points or some other reward indicator. The accounting routine 72 is used to track the cumulative value of player winnings and losses after the player has cashed-out. The accounting routine 78 enables the CMC 12 to duplicate a player's credit balance at any point in the outcome sequence.

The CMC memory 32 further contains an audit routine 78 which is used to manage and update records of all transactions with the HTVs 20 identified in the HTV database 36, using the transaction specific data discussed above.

The CMC memory 32 also includes a redemption routine 78 which directs the CMC to verify asserted winnings to enable a player to cash-out. The redemption routine 78 can cash-out any winnings in a player's current credit balance, either by generating new game authorizations or by authorizing some kind of payoff. The redemption routine 78 directs the CMC 12 to read a authenticatable redemption request message ARRM generated by the HTV 20 in connection with a prize redemption request. The redemption routine 78 can also determine the number of standby outcomes/game authorizations which were actually played and those that remain outstanding at the time the redemption request is made. All of this will be explained in more detail below.

In order to provide for tracking player history, data relating to players, including any related bonus award data, may be stored in a player information database 79. In this

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manner, the managing authority 11 can provide players with loyalty rewards such as free outcomes/game authorizations for total "tickets" purchased or the like.

Referring now to FIGS. 4 and 5, the HTV 20 in a preferred embodiment is a hand-held unit having a controller 82, a display 84, and player controls 86. Preferably the HTV 20 includes one or more of the following: a printer interface 88a for connecting the HTV 20 to an external printer, an internal printer 88b, a bar code scanner 90, a communications interface 92 compatible for connecting the HTV 20 to the communications interface 26 associated with an AT 16 to enable the HTV 20 to electrically communicate directly with the AT 16, a read/write interface 94 for reading data from and writing data to smart card 28, a modem 96 for connecting the HTV 20 directly to a telecommunications network 14 coupled to the CMC 12 in an alternative embodiment shown in FIG. 12 and described below, and an antenna 115 coupled to a transceiver 113 for broadcasting and receiving messages to and from a base station 600 associated with CMC 12 in another alternative embodiment shown in FIG. 13 and described below.

The player controls 86 may be integrated into display 84 in a touch-screen arrangement of the type known in the art. The display 84 may also include the capability to render messages in a bar code readable format to enable them to be scanned by the bar code scanner 24 coupled to the AT 16. The player controls 86 allow the player to select various game, outcome transfer, and redemption functions. The controller 82 includes a CPU 98, a clock 101 and memory 102 comprised of ROM and RAM in a conventional arrangement. The controller 82 may be optionally housed in a tamper-evident or tamper resistant and/or evident enclosure to reveal to the managing authority 11 any suspected tampering with the device. For enhanced security, the encryption/decryption module that implements the portions of the cryptographic protocols at HTV 20, is disposed within such a secure perimeter.

A secure perimeter is a defined physical area of hardware which is tamper-resistant and/or temper-evident, in which resides data or algorithms whose characteristics must not be alterable in order for a system to remain secure. Examples of secure perimeters include U.S. military encryption devices such as the STU-III telephone made by Motorola and AT&T, and the power@ card, available from National Semiconductor Corp. As shown schematically in the block diagram of FIG. 5B, the latter is a dedicated encryption/decryption device embodied in a PCMCIA card 300 which can interface with the HTV 20 through, for example a PCMCIA socket or other compatible interface. The card includes a 32-bit CPU 302 with ROM 304 containing encryption algorithms, a real-time clock 36' and an interface with an off-chip battery (310)—backed RAM 308 which holds encryption data and key information. Any attempt to tamper with or get at the encryption data stored within the device results in a memory loss of that data. Moreover, the I/O pins 312 of the device are electrically isolated to prevent pin-level probes, and the chip itself contains mechanical and chemical protection to prevent chip-probing equipment from accessing the encryption information from the processor directly. If such a secure perimeter 300 is employed, all encryption/decryption functions are performed in the secure perimeter 300 and not in the CPU 98 of the HTV 20. Control of the secure perimeter 300 by the HTV 20 and communications between the CPU 302 of the secure perimeter 300 and the CPU 27 of the HTV 20 are known in the art and need not be described here in detail. When the secure perimeter 302 is called upon by the HTV 20 to generate an authenti-

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catable message, authenticate an authenticatable message, and/or perform any other required functions, the controller 82 of the HTV 20 sends the appropriate signals to the CPU 302 of the secure perimeter 300. If desired, the secure perimeter 300 may be used to subsequently authenticate the authenticatable messages that it generates, as well as authenticatable messages from any other HTV 20 in the system. It may also be used to time-stamp messages or track times to completion for races of skill with the clock 306.

External secure devices such as the aforementioned iPower cards are also known as "tokens." A token is a physical computing device used by individuals to gain access to protected electronic resources. Intelligent security tokens may be utilized to prevent unauthorized players from using that HTV 20, as well as for implementing the encryption/decryption functions for outcome authentication and certification. The iPower card described above, is an example of a token in a secure perimeter.

Other such tokens include the SMARTDISK, manufactured by SmartDisk Security Corporation. The SMARTDISK contains a CPU and memory used for encrypting and decrypting data. Thus, as with the iPower card, the encryption/decryption module may reside in the SMARTDISK. The SMARTDISK requires a user password to function. Thus, access to the system requires the player to physically possess the token and know the proper password. Smart cards are similar tokens. They are shaped like credit-cards, but contain an embedded microprocessor for implementing various security functions.

Another type of token called TOUCH MEMORY is manufactured by Dallas Semiconductor Corporation. This device consists of a computer chip housed within a small button shaped stainless steel case. The case may be ring-shaped and worn around a player's finger. The chip contains up to 64 kb of RAM or EPROM, sufficient to store a plurality of cryptographic keys. The device transmits data bidirectionally at 16.3 kb per second when placed into contact with a reader device. Each chip contains a unique serial number that is laser-etched into the chip at the time of manufacture. Keys from the device may be used in any of the cryptographic protocols described herein for authentication and/or encryption, as well as for user identification. The DS1422 UNIQUEWARE product can be configured to transparently decrement each time that the device is used, allowing players to obtain and store a limited number of start messages, for example. The DS1427 configuration includes a tamper-resistant real-time clock 306 that may be utilized in the different applications described herein.

The HTV's CPU 98 communicates with the player controls 86 through a control interface 103, and with video generation hardware/drivers 104 for controlling the display 84, and sound generation hardware/drivers 106 coupled to a speaker 108 for communicating game sounds in accordance with well-known principles.

To enable data to be communicated to and from the HTV 20, several embodiments are contemplated, including voice transfer, manual input, scanning, RF communications and the like. A voice activated circuit 110 of the type known in the art may be coupled to a microphone 112 to enable messages to be communicated to the CPU 98 by spoken commands. The CPU 98 communicates with the printer interface 88a or the internal printer 88b, bar code scanner 90, interface 92, read/write interface 94, and modem 96 through conventional I/O interfaces shown generally in the block diagram at 114. The CPU 98 may communicate with RF circuitry 113 coupled to an antenna 115 for communicating messages directly with the CMC 12 via the base station as

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shown in the alternative embodiment in FIG. 11. In another application, the HTV 20 may have a GPS receiver 111 coupled to antenna 115 which communicates temporal and positional information to the CPU 98. In this manner the HTV 20 can be prevented from operating unless it is located in a certain venue where gaming is permitted by a position enabling/disabling routine in memory.

The authenticatable game authorization message AGAM may be communicated to the HTV 20 using the following protocols. In a first embodiment, the AT 16 prints the authenticatable game authorization message AGAM on a receipt 30 and the agent provides the AGAM to the player. The player simply enters the authenticatable game authorization message AGAM into the HTV 20 using the player controls 86. Alternatively, the AT 16 may print the authenticatable game authorization message AGAM in a bar code readable format to enable the bar code scanner 24 to simply scan the same. In either case, the receipt can be printed without ink using a carbonless two-part form which the player tears off to prevent anyone else from viewing the authenticatable game authorization message AGAM and then trying to input it to another HTV 20. In an alternative embodiment, the HTV 20 can connect to the AT 16 at interface 92 and the authenticatable game authorization message AGAM may be communicated directly to the HTV 20. In another embodiment, the authenticatable game authorization message AGAM may be written to memory in the smart card 28 through the read/write interface 27 connected to the AT 16. The player then plugs the smart card 28 into the HTV 20 and the AGAM may be read by the HTV 20 from the smart card 28. In a further embodiment, the authenticatable game authorization message AGAM may be spoken into the microphone 112, either by the player, the agent or by an automated voice over the telephone in a telephone embodiment shown in FIG. 12, and processed through the associated voice activated circuit 110. In another telephone embodiment, the HTV 20 may be connected to the telephone network 514 directly and the authenticatable game authorization message AGAM may be communicated to the HTV 20 through the modem 96. In the embodiment shown in FIG. 13, the authenticatable game authorization message AGAM may be communicated from the CMC 12 through an RF transmission from either the AT 16 or the CMC 12. Redemption request messages ARRM from the HTV 20 to enable players to cash-out winnings may be similarly communicated.

Referring now to FIG. 6, there is depicted an exemplary memory arrangement 100 of programs and data in the HTV 20. Memory 100 includes an operating system generally indicated by the reference numeral 117 which controls the HTV 20 in a conventional manner. With respect to the present invention, the other programs and data in memory 100 enable the HTV 20 to read messages/data from the CMC 12 and to process these messages in order to generate games which yield the outcomes/game authorizations. The HTV memory 100 may also include a GPS derived position enable/disable routine 101 which disables the HTV 20 when position information from the GPS receiver 111 indicates that the HTV 20 is located in a venue where gaming is impermissible. Information on gambling venues for use by the position enable/disable routine may be stored in field 103. As described above with respect to the CMC memory 32, each HTV stores a unit identifier I in field 116 and, optionally a sequence variable SV in field 118. A password (or multiple passwords for multiple players on a single HTV 20) is stored in field 122. When a player activates the HTV 20, a password security routine 124 checks the player's

password in a conventional manner before allowing the player to continue. The HTV memory 100 further includes an outcome purchase/game authorization routine 126 that directs the HTV 20 to generate information to be communicated to the CMC 12 for purchase requests, and to read the outcomes/game authorizations represented in the authenticatable game authorization message AGAM. To facilitate manual entry of data, the authenticatable game authorization message AGAM may be compressed by the CMC 12, and after entered into the target HTV 20, a compression/decompression routine 130 is called by the outcome purchase routine 126 to decompress the authenticatable game authorization message AGAM into usable outcome data (i.e., an outcome sequence). A record of the transaction 131, including the m outcomes/game authorizations $O_1 \dots O_{j+m}$ represented by the AGAM are stored in field 132. If there are x standby outcomes/game authorizations $O_s \dots O_{s+x}$ assigned, these are stored in field 134. Accompanying this data may be the price point for each outcome, the net payoff, and the time/date of entry. Account data based upon the foregoing is continually updated by an accounting routine 154 and stored in field 135. The accounting routine 154 directs the HTV 20 to calculate the running cash balance. If there are several players assigned to a given HTV 20, there may be individual accounts for each player.

As described above with respect to the CMC 12, the authenticatable game authorization message AGAM may represent one or more memory addresses in a reference string HTVRS. Accordingly, each HTV 20 may store an HTVRS in field 142. In such an embodiment, the outcome purchase routine 126 directs the HTV 20 to find the sequence of outcomes/game authorizations $O_j \dots O_{j+m}$ or the net payoff on that sequence in the HTVRS.

Alternatively, the authenticatable game authorization message AGAM may represent a seed value for a one-way function in field 144. In such an implementation, the outcome purchase routine 126 directs the HTV 20 to generate corresponding outcomes/game authorizations $O_j \dots O_{j+m}$ using the one-way function. The same one-way function is stored in the CMC memory 32 as discussed above, to enable the CMC 12 to verify the data pursuant to a prize redemption request.

As described above, by making the game authorization messages authenticatable, they are precluded from being used, either inadvertently or fraudulently, in the wrong HTV 20. An authentication/encryption module 146 operating in accordance with the above, provides for the authentication/encryption/decryption of messages communicated to and from the HTV 20. Encryption/authentication keys and algorithms reside in field 148. As described above with respect to the CMC memory 32, the sequence variable SV, which is unique to each HTV 20, may be used as a key or otherwise incorporated in the messages.

The HTV 20 includes a game generation routine ("game program") 152 which provides for the generation of various games in accordance with the purchased outcome data and win/lose scoring on the display 84. The game generation program may also include a tutorial for teaching players how to play the games and a help function for each game. The games can be generated with win or lose outcomes that identically correspond to each outcome $O_j \dots O_{j+m}$ represented by the authenticatable game authorization message AGAM. In this regard, the game merely interprets or reveals the outcome. Alternatively, the games may be generated where an m number of games have a net payoff equal to the net payoff in the series $O_j \dots O_{j+m}$. The latter, however, is not suitable for embodiments where standby outcomes/game

authorizations are assigned as described below. A single game may have multiple chances but only one outcome.

The game generation program 152 may be designed to generate a variety of games of types well known in the art. Accordingly, the specifics of presenting electronic games on a game computer need not be discussed in detail. It is contemplated that many kinds of games can be rendered, including games of skill; "no-choice" or non-skill games with a predetermined outcome such as, for example, the type commonly associated with pull-tab type instant lottery tickets, slot machine type games where the outcome appears random to the player but is known to the CMC 12 prior to, or becomes known to the CMC 12 at the time of, game purchase; a sweepstakes, or bingo; or pseudo-choice games with a predetermined outcome such as video poker. In the case of the latter, the outcome for a particular poker game is predetermined with a maximum payoff which is recovered if the player plays every hand correctly. If the player plays incorrectly, the payout is less than the maximum represented by the outcome for a particular game. In addition, the game program 152 may generate games that are races of skill. These include crossword puzzles or word descrambler games which must be completed within a specified period of time. If the player completes the game in the time allotted, the player is paid the predetermined payoff on the outcome purchased for that game. If not, a win is not credited to the HTV account 155 described below. The game program 152 can be designed to require a game identifier such that the managing authority 11 selects the particular games to be played in connection with any outcomes/game authorizations that are sold. In this regard, the authenticatable game authorization message AGAM may include data that the game program 152 uses to direct the HTV 20 to generate a specific game for those outcomes/game authorizations. In order to provide for updating games in the HTV 20, new game programs can be loaded into memory 100 in a conventional manner via the smart card 28 or by plugging the HTV 20 into the AT 16 as described above and then uploading the appropriate software instructions/data.

The HTV memory further includes a redemption routine 158 that is used to cash-out the player's current credit balance in the player's account 155. The redemption routine 156 has an associated cash-out function. When selected, it directs the HTV 20 to generate an authenticatable redemption request message ARRM, which is subsequently communicated to the CMC 12 using any of the above-described methods for communicating authenticatable game authorization messages AGAMs to the HTV 20, only in reverse. Authenticatable redemption request messages ARRM are interpreted by the redemption routine 78 in the CMC 12 to verify cash-out requests by comparing known target HTV identification data and outcome data (net winnings, the number of games played) for a particular unit. The authenticatable redemption request message ARRM may be generated on the display 84 of the HTV 20 and orally provided to the agent at a retailer 18 for manual entry into the AT 16. Alternatively, the authenticatable redemption request message ARRM can be printed onto a receipt 30, either by an internal or external printer 88b associated with the HTV 20, or by a printer 22 at the lottery retailer via the printer interface 88a. Such a receipt 30 is then provided to the agent. In this connection, the authenticatable redemption request message ARRM may be rendered on the display 84 or on the receipt 30 in a bar code readable format and scanned by the bar code scanner 24 at the AT 16. In another embodiment, the authenticatable redemption request message ARRM may be written to the smart card 28 and then read therefrom by

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the AT 16. In yet another embodiment, the authenticatable redemption request message ARRM can be communicated to the CMC 12 over the telephone network 14 via the modem 96. In still another embodiment, the authenticatable redemption request message ARRM may be communicated from the HTV 20 to the CMC 12 through an RF transmission to either the AT 16 or the CMC 12.

The HTV memory 100 also includes an audit routine 160 which stores a record of all activity performed on the HTV 20 in field 161 to assist in protecting data integrity and to verify that the various programs in memory 100 have not been tampered with. The audit routine 100 further provides a record of player activity for the player and the managing authority 11 in the event of any dispute.

Referring now to FIG. 7, there is shown a flow-chart of an exemplary outcome purchase of m "tickets" (outcomes/game authorizations) from the CMC 12 through an AT 16 at a lottery retailer 11. For convenience, the following assumes all outcomes/game authorizations are purchased at a single price point. However, the outcomes/game authorizations may represent different price points that are embodied in a separate authenticatable game authorization message AGAM for each price point, or collectively in a single authenticatable game authorization message AGAM.

To start the purchase sequence, the player first activates the HTV 20 and enters his or her password which is checked by the password security routine 124. The player then selects the purchase "ticket" function. The outcome purchase/game authorization routine 126 directs the HTV 20 to generate a challenge message CM as one-way function of I and SV ($CM=f(I, SV)$) where the I is concatenated with SV . The CM is communicated to the CMC 12 via any of the above-described methods. At the same time, the player arranges for payment of some kind, confirmation of which by the CMC 12 allows the procedure to continue.

The CMC 12 then runs the outcome purchase/game authorization routine 48 and, in a sample protocol, obtains the target HTV 20's authentication key K_A and forms $T_1=MAC\{K_A\}$ (T_0 , CM) where CM is a challenge message generated by the target HTV 20 and (T_0 , CM) represents T_0 concatenated with CM. It then generates a string of digits $R=(T_1, D)$, where D is a string of decimal digits and (T_1, D) represents T_1 concatenated with D . R represents an authenticatable game authorization message AGAM in the format of a compressed code which may be manually entered into the HTV 20 by the player. In this regard, one starts with D , an empty string of decimal digits, and B , a large binary number. Next, read out T in hexadecimal, discard any hex digits from a to f , and copy all decimal digits into D . Then form $T=\text{hash}(T)$, and repeat the procedure until D has all the decimal digits it requires. The outcome purchase routine 48 in CMC memory 32 randomly selects the next m unsold outcomes/game authorizations $O_j \dots O_{j+m}$ for a particular price point from the RPD 44 in connection with a given purchase. It also directs the CMC 12 to store the outcomes/game authorizations $O_j \dots O_{j+m}$ in field 52, the price point in field 56, the net-payoff and the time/date.

The string $R=AGAM$ is communicated to the HTV 20, and verified by the HTV 20 using cryptographic protocols. If verified, then SV is incremented and the number of outcomes/game authorizations represented by T_1 is updated and ready for play.

The CMC 12 stores the authenticatable game authorization message AGAM for the given purchase in the record 40, updates SV as a one-way function of the authenticatable game authorization message AGAM, and stores the new value for SV in field 38.

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In a scenario where the player goes to an agent terminal AT 16, the CMC 12 transmits the authenticatable game authorization message AGAM to the AT 16 in a manner similar to the way in which typical lottery tickets are purchased as is well known. The AT 16 can print a receipt 30 containing the AGAM, date, time, price point and m (the # of purchased outcomes/game authorizations) at step 332. The agent gives the receipt 30 containing the authenticatable game authorization message AGAM to the player after the player pays the agent in accord with conventional practice. At this point, an outcome purchase confirmation message is communicated from the AT 16 to the CMC 12 which serves as confirmation that the player has "irrevocably" purchased the outcomes/game authorizations represented by the authenticatable game authorization message AGAM.

The HTV 20 can verify the contents of the authenticatable game authorization message AGAM by cryptographic protocols. In one example, the AGAM is authenticated using SV as a key and again using I as a key. It can then store the authenticatable game authorization message AGAM in the record 131 for future audits. If data representing the outcomes/game authorizations are compressed by the CMC 12, the decompression/compression routine 130 is enabled to decompress the sequence and store the same in field 132. The outcome purchase routine 130 may also store the price point and net payoff. If the authenticatable game authorization message AGAM represents an address in the HTVRS, the outcome purchase routine 130 will search the HTVRS stored in field 142 for that address or an address where a series of outcomes/game authorizations reside with the same net payoff as $O_j \dots O_{j+m}$. If the authenticatable game authorization message AGAM represents a seed value for a one-way function stored in field 144, the outcome purchase routine 130 will use the seed value to generate the same series of outcomes/game authorizations $O_j \dots O_{j+m}$. Alternatively, the authenticatable game authorization message AGAM may simply represent the net-payoff on a number of m outcomes/game authorizations $O_j \dots O_{j+m}$, in which case the game program 152 generates a number of games with the same net payoff. At the end of the procedure, both the HTV 20 and the CMC 12 have new values for SV stored in their respective memory areas. The player plays games on the HTV 20 generated by the game program 152 which yield the outcomes/game authorizations $O_j \dots O_{j+m}$ or the net payoff on those outcomes/game authorizations in a conventional manner. As described above, the player's account balance is updated by the accounting routine 154 as each outcome is revealed.

Referring now to FIG. 8, there is shown an exemplary prize redemption or cash-out sequence. In the course of the redemption transaction, the HTV 20 identifies itself to the CMC 12, communicates data representing what has transpired on that HTV 20, and if such activity is verified by the CMC 12, it then authorizes the appropriate payoff. To begin the redemption sequence, the player first activates the HTV 20 and again, may be prompted to enter his or her password, which is checked by the password security routine 124 as described above. The player then chooses a cash-out function. The redemption routine 158 in HTV memory 100 directs the HTV 20 to generate a challenge message CM. As discussed above, CM may comprise (I, SV). This value uniquely identifies the HTV 20 to the CMC 12. The CMC 12 then forms a random challenge R_0 , which is communicated to the HTV 20. The HTV 20 then generates the authenticatable redemption request message $ARRM=T_0=MAC\{K_A\}$ (R_0 , Outcome(s), SV). This data represents the outcomes/game authorizations and may be generated as a

function of I and, optionally, as a function of both I and SV. The authenticatable redemption request message ARRM is similar to the authenticatable game authorization message AGAM and related protocols described above. It may be converted into a compressed number to enable manual entry into a telephone for communication to the CMC 12 by concatenating T_0 and D as discussed in the foregoing. The ARRM may also include an updated cash balance from the account 155, which represents the payoff on the outcomes/game authorizations accumulated as the game(s) were played. The value for SV was updated as a one-way function of the authenticatable game authorization message AGAM as described above, and this value was also updated in the CMC memory 32. The authenticatable redemption request message ARRM is communicated to the CMC 12 using the foregoing protocols. In an exemplary embodiment, the player provides a retailer agent with the redemption request, who thereafter activates a redemption function on the AT 16, and transmits the ARRM to the CMC 12 with a redemption request in a conventional manner. The CMC 12 then runs the redemption routine 78 which verifies the authenticatable redemption request message ARRM using the I and SV values stored in memory 32 in fields 37 and 38, respectively, of the HTV database 36. If the ARRM is not verified, the CMC 12 denies the redemption request. If it is verified, the CMC 12 checks the cash balance represented in the authenticatable redemption request message ARRM, against the predetermined amount associated with the purchase of game authorizations for the target HTV 20. The CMC 12 can then transmit a validation message to the AT 16, and the prize amount is debited in account 73. At this point, the player may opt to purchase more outcomes/game authorizations with the present cash balance, in which case the outcome purchase sequence described above is repeated, or alternatively, the player is paid by the agent or some other form of payment is arranged.

As described briefly above, an outcome purchase request for m outcomes/game authorizations $O_j \dots O_{j+m}$ may be accompanied by x standby outcomes/game authorizations $O_s \dots O_{s+x}$. The standby outcomes/game authorizations are supplied in a number sufficient to exhaust all winnings, or so as to generate a large win at some point in the sequence above a predetermined value where the outcome purchase routine 126 in the HTV 20 will direct the HTV 20 to stop generating games and provide a cash-out instruction on the display 84. Referring now to FIG. 9, there is shown a portion of an RPD 44 with five (5) purchased outcomes/game authorizations $O_j \dots O_{j+m}$ which have a net-payoff of \$16. In this example, the outcome purchase routine 48 in the CMC 12 has selected twenty four (24) standby outcomes/game authorizations $O_s \dots O_{s+x}$ in two groups as shown. The standby outcomes/game authorizations can be selected from anywhere in the RPD 44 but the groups are played in order. The relative positions between the purchased outcomes/game authorizations m and the standby outcomes/game authorizations x shown in the RPD 44 are merely exemplary. For the purpose of this example, all outcomes/game authorizations are purchased for \$1 each. The player wins \$16 on the purchased outcomes/game authorizations $O_j \dots O_{j+m}$. If the player spends that \$16 on the first group of sixteen (16) standby outcomes/game authorizations and those outcomes/game authorizations yield a net payoff of \$8, the next group may constitute eight (8) outcomes/game authorizations which yield a net payoff of zero (0) in the first example (full exhaustion of winnings) or some large prize (e.g., \$500) represented by the fourth outcome in the order shown in the second example for the second group. Refer-

ring to the second example, if the outcome sequence in the second group is played in order, and the sequence of outcomes/game authorizations is lose, win \$2, win \$1, win \$500, the player retains \$4 in winnings after the first standby group is played and \$2+\$1+\$500 in the second group for a net win of \$507. The game program 152 in the HTV 20 will direct the HTV 20 to generate a cash-out message when such a large outcome is revealed. If there are any remaining standby outcomes/game authorizations, in this example four losers, these will be voided in the HTV 20 by the redemption routine 158. Similarly, those four standby outcomes/game authorizations will be voided in the CMC 12 when the CMC 12 receives an authenticatable redemption request message ARRM which represents all outcomes/game authorizations transferred to that HTV 20, including the m purchased outcomes/game authorizations, and the x standby outcomes/game authorizations. Since the player may choose to cash-out at some time during the sequence before all standby outcomes/game authorizations are revealed, the authenticatable redemption request message ARRM generated by the HTV 20 represents which standby outcomes/game authorizations were revealed by the HTV 20 and enables the CMC 12 to compute the proper payoff and to void any unused standby outcomes/game authorizations in the CMC 12.

In a standby outcome embodiment, the outcome purchase routine 48 in the CMC 12 randomly selects m purchased outcomes/game authorizations $O_j \dots O_{j+m}$ and x standby outcomes/game authorizations $O_s \dots O_{s+x}$ from the RPD 44 in connection with a purchase request. The CMC 12 then generates an authenticatable game authorization message AGAM, which represents both the m outcomes/game authorizations and x standby outcomes/game authorizations. The HTV 20 then generates games which yield the m outcomes/game authorizations $O_j \dots O_{j+m}$ or the net payoff on those outcomes/game authorizations. As before, the HTV 20 utilizes the accounting routine to update the cash-balance in account 155. The outcome purchase routine 126 can direct the HTV 20 to display an option to reinvest the current cash-balance (winnings) in account 155. If the player chooses to cash-out, the above-enumerated cash-out sequence may be followed. If the player wants to reinvest some or all of the cash-balance, the game program 152 will then generate a game(s) which yields a standby outcome in $O_s \dots O_{s+x}$. The accounting routine 154 in the HTV 20 keeps updating the account 135 with a new cash-balance and displays the updated balance to the winner on the display 84, depending upon whether the standby outcome was a winner or loser. The outcome purchase routine 126 then voids the last standby outcome revealed, and updates the status (to "revealed") of that outcome in the sequence of standby outcomes/game authorizations stored in field 54. If the last standby outcome revealed generates a large prize over some predetermined threshold, the outcome purchase routine 48 directs the HTV 20 to display a message to the player that he or she must cash-out. The player then goes through a prize redemption sequence. If not, the outcome purchase routine 48 checks whether there are any unused standby outcomes/game authorizations remaining in field 54. If not, the player has exhausted the cash-balance in account 135 and the HTV 20 generates a zero cash-balance on the display 84. If any standby outcomes/game authorizations remain, the player can choose whether to continue to reinvest. If the player again chooses to reinvest, the HTV 20 will generate another game which yields the next standby outcome (this process may be repeated until exhaustion). If the player elects to cash-out, the HTV 20 indicates the cash-balance in account 155 and the player then proceeds through the prize redemption sequence.

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To cash-out in a standby outcome implementation, the redemption routine 126 in HTV memory 100 generates a status record of the standby outcomes/game authorizations and the accompanying cash balance in account 155, incorporates the same into an authenticatable redemption request message ARRM, and voids any unused standby outcomes/game authorizations stored in field 54. After transmitting the ARRM to the CMC 12, it runs the redemption routine 78 to verify the authenticatable redemption request message ARRM and calls the accounting routine 154 to calculate the payoff on the standby outcomes/game authorizations represented in the ARRM. It then credits the HTV account 135, voids any unused standby outcomes/game authorizations, and sends a validation message to the AT 16 to authorize prize redemption.

Referring now to FIG. 10, there is shown another embodiment of the present invention for playing probabilistic games of chance, in which the authenticatable game authorization message AGAM represents a plurality of player selectable chances to win. Thus, the player's selection determines the outcome of the game. The CMC 12 then verifies the player's selection through the foregoing protocols. In the example shown, the game has five (5) "scratch-off" areas identified by the reference numerals 157a . . . 157e (for the purpose of this example, the outcomes are sequential —O_j . . . O_{j+5}). The player can only select one of these areas per game authorization. Assume the sequence represents the following outcomes in the RPD: lose, win \$20, lose, win \$5, lose, and the player selects area 157c (O_{j+2}), corresponding to a win of \$20. To effectuate redemption, the HTV 20 generates an authenticatable redemption request message ARRM that represents outcome O_{j+2}. To prevent a player from hacking the device in an attempt to ascertain which chance to select, the HTV 20 only contains data identifying outcomes that were assigned from the CMC 12. Thus, reading the data in the HTV 20 is useless, since the player could not interpret the same to find the most favorable outcome. Alternatively, this embodiment can be modified such that the HTV 20 immediately indicates the prize amount, by protecting the integrity of the data. This may be implemented by having the processor components disposed within a tamper-resistant secure perimeter as described above.

Referring now to FIG. 11, there is depicted another embodiment of the invention, in which games of skill are played on the HTV 20 with no immediate outcome. The results of the game are generated by the CMC 12 upon receipt of certain game parameter data from the HTV 20. In an illustrative application, the game program 152 directs the HTV 20 to render a golfing game of skill, such as, for example, PGA TOUR 96 available from ELECTRONIC ARTS. In this game, a digital image of a golf game is rendered on the HTV display 84, comprising a golf ball on a tee, fairway, trees, sand traps, etc. A human figure is superimposed on this background, and swings a golf club in response to player inputs via the input controls 148. The player's club swing data represents various parameters, including the club selected (e.g., one iron, two iron, three wood, etc.) and its specific characteristics (e.g., club head orientation), foot placement, and swing force, speed, direction and the like. In the course of a typical computer generated golf game, these parameters are applied to software instructions that compute a trajectory path for the ball to generate a resultant ball location. After the player swings the club, the display may depict the new ball location relative to the hole. The player continues the game in accordance with well known principles until he places the ball in the hole, and a corresponding score is generated. The present invention contemplates such a game of skill where the player's swing produces a given result that is not known

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by the player until confirmed by the CMC 12. Assume for the purpose of illustration, that the game objective is to attain a hole-in-one. The initial ball position is the same for every swing, and only one swing per game is allowed. Thus, each game/game authorization is contained in the authenticatable game authorization message AGAM as described in the foregoing, and enables a single swing to be made. The game program 152 is executed by the HTV 20 and allows the player to select a club, foot placement, swing power and other swing parameters to "swing" the club in accordance with the above, utilizing the input controls 148. Other factors, including ambient conditions such as wind speed and direction or other random variables, may be introduced for greater realism. In response to the player's swing input, the HTV 20 generates a data message representing all of the above-described swing parameters, but the player does not immediately know the result. The HTV 20 or other associated literature instruct the player to contact the central authority as described in the foregoing to find out whether the swing resulted in a "win." The swing data is incorporated into an authenticatable redemption request message ARRM and communicated to the CMC 12 using any of the protocols discussed above (e.g., code input by telephone, direct electronic link, etc.). The CMC 12 then runs a program that takes the player's swing parameters to produce a given result; in this case, either a hole-in-one or a miss. If the player achieved a hole-in-one, then some prize may be authorized. To prevent players from eventually determining the swing parameters that produce a favorable result for a given game, such as the proper club choice and swing force/timing, the game program 152 can render different course configurations. These are selected by the CMC 12 for any given game authorization, and identified by appropriate data in the authenticatable game authorization message AGAM that enables game play on the HTV 20.

Referring now to FIG. 12, an CMC 12 is coupled to a telecommunications network 14' having interactive voice capability and is accessible by dialing a 900 number or the like to enable the outcome purchase and redemption to be effectuated over the telephone 13. Alternatively, the telecommunications network 14' may be any interactive communications or data network. The protocol is similar to that described above with regard to purchase and redemption at an AT 16, except that here the player simply keys the information into the telephone 13 in response to prompts from the system. Thus, the player first communicates the HTV identification information and requested game authorization data to the CMC 12. If HTV identification/registration is confirmed, the CMC 12 then provides a "ready" indication to the player with instructions to select the number of outcomes/game authorizations to be purchased for each price point. The CMC 12 then generates an authenticatable game authorization message AGAM as described above which the player enters into the HTV 20. The system operates similarly to effectuate prize redemption. The HTV 20 generates an authenticatable redemption request message ARRM, and the player simply keys the redemption request message into the telephone in response to the appropriate prompts. The authenticatable redemption request message ARRM is communicated to the CMC 12, which verifies the same, including the expected payoff as discussed above. A credit can then be made to an account for the HTV/player in the CMC 12. In a modification of this embodiment, the HTV 20 may contain its own modem 96 that enables it to communicate directly over the telecommunications network 14'. Alternatively, the HTV 20 may incorporate a cellular phone (not shown) or some other communications apparatus for the same purpose. For the purpose of this invention, this embodiment is still considered to be an "off-line arrangement" as there is no need to have an on-line data connection between the HTV 20 and the CMC 12 while game are being played.

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In a further embodiment shown in FIG. 13, the CMC 12 communicates through a base station network 15 with a plurality of base stations 600 for broadcasting and receiving RF messages. To operate in such an environment, the HTV 20 may include a transceiver 113 for broadcasting and receiving RF communications to enable all purchase and redemption functions to be implemented without the need for the player to travel to a retailer. The protocol, however, is similar to the ones described above with respect to the other embodiments, and thus need not be described in detail here.

We claim:

1. A method of purchasing and displaying a lottery game outcome, comprising:

transmitting a financial account identifier and a request for at least one lottery game outcome on a numeric keypad of a telephone to a remote computer;
receiving an encoded message containing at least one lottery game outcome from said remote computer;
inputting by a user said encoded message to a gaming computer, said gaming computer being off-line with respect to said remote computer; and
receiving said at least one lottery outcome from said off-line gaming computer.

2. The method of claim 1 wherein said transmitting step further comprises the step of transmitting a gaming computer identification code to said remote computer.

3. The method of claim 2, wherein said step of receiving an encoded message includes receiving an encoded message corresponding to said at least one lottery outcome and said gaming computer identification code.

4. The method of claim 1 wherein said remote computer has no electronic communication link with said off-line gaming computer.

5. A method of receiving and displaying a lottery game outcome, comprising:

receiving from a user an encoded message containing at least one lottery game outcome, said encoded message being generated by a remote computer;
decoding at a gaming computer said encoded message to reveal said at least one lottery game outcome, said gaming computer being off-line with respect to said remote computer; and
displaying said at least one lottery game outcome to said user.

6. The method of claim 5 wherein said step of receiving from a user an encoded message comprises receiving from a user an encoded message containing at least one lottery game outcome and a gaming computer identification code.

7. A device for receiving and displaying a lottery game outcome, comprising:

means for receiving from a user an encoded message containing at least one lottery game outcome, said encoded message being generated by a remote computer;
means for decoding said encoded message to reveal said at least one lottery game outcome, said means being off-line with respect to said remote computer; and
means for displaying said at least one lottery game outcome to said user.

8. A device for receiving and displaying a lottery game outcome, comprising:

a memory device; and
a processor disposed in communication with said memory device; said processor configured to:
receive an encoded message from a user containing at least one lottery game outcome, said encoded message being generated by a remote computer;

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decode said encoded message to reveal said at least one lottery game outcome; and
transmit said at least one lottery game outcome to said user;

said processor being off-line with respect to said remote computer.

9. A computer device comprising:

a computer readable medium having computer readable program code means embodied therein, said computer readable medium being off-line with respect to a remote computer, and said computer readable program code means comprising:

means for receiving an encoded message from a user containing at least one lottery game outcome, said encoded message being generated by said remote computer;
means for decoding said encoded message to reveal said at least one lottery game outcome; and
means for transmitting said at least one lottery game outcome to said user.

10. A method of playing a computer game, comprising:
transmitting a financial account identifier on a numeric keypad of a telephone to a remote computer;

transmitting to said remote computer on said numeric keypad a request for at least one authorization to play a game;

receiving from said remote computer a message that is authenticatable, said message comprising a code, in which said code corresponds to at least one authorization to play a game;

inputting by a user said code to a gaming device;

inputting game play selections to said gaming device;

receiving encoded game play selections from said gaming device;

transmitting said encoded game play selections to said remote computer; and

receiving from said remote computer a game outcome.

11. The method of claim 10 wherein said step of receiving from said remote computer a game outcome comprises receiving a message corresponding to said game outcome from said remote computer and inputting said message to said gaming device to display said game outcome.

12. A method, comprising:

receiving from a user a financial account identifier;

receiving from said user a request for at least one authorization to play a game;

determining at least one authorization to play a game;

generating a code based on said at least one authorization to play a game;

generating a message that is authenticatable, said message comprising said code;

transmitting to said user said message;

receiving from said user encoded game play selections generated by a gaming device, said gaming device being configured to enable play after receiving said code from said user;

decoding said encoded game play selections;

generating a game outcome message based on said encoded game play selections; and

transmitting said game outcome message to said user.

* * * * *

EVIDENCE APPENDIX D
COPY OF ARCHER U.S. PATENT NO. 6,277,026



US006277026B1

**(12) United States Patent
Archer****(10) Patent No.: US 6,277,026 B1
(45) Date of Patent: Aug. 21, 2001****(54) SYSTEM AND METHOD FOR
FACILITATING THE PURCHASE AND SALE
OF LOTTERY TICKETS ONLINE****(75) Inventor: Michael Archer, Dallas, TX (US)****(73) Assignee: MCI Communications Corporation,
Washington, DC (US)****(*) Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.**(21) Appl. No.: 09/085,130****(22) Filed: May 27, 1998****(51) Int. Cl.⁷ A63F 9/24****(52) U.S. Cl. 463/42; 463/17****(58) Field of Search 463/16, 17, 18,
463/19, 25, 29, 40, 41, 42****(56) References Cited****U.S. PATENT DOCUMENTS**

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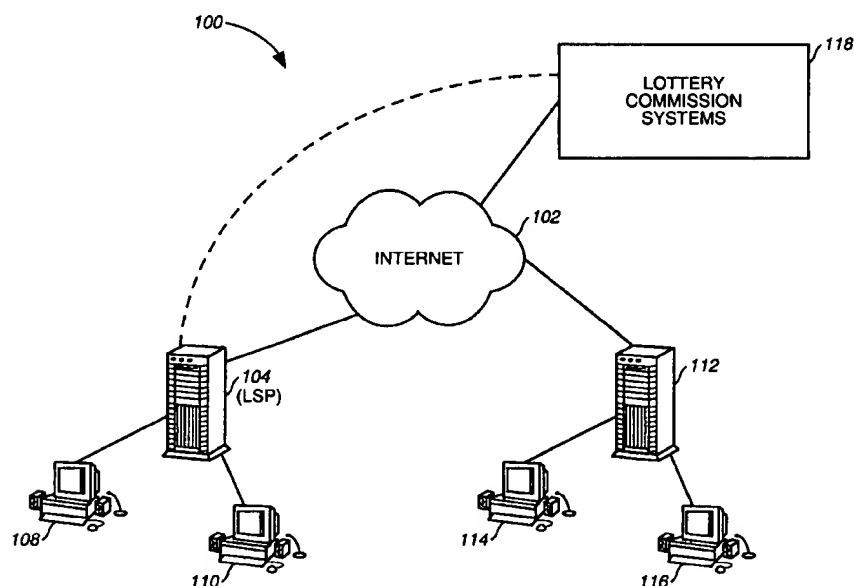
"Class 1 Secondary Certificate Upgrade" retrieved via the Internet and World-Wide-Web at the VeriSign Web Site (www.verisign.com) Jun. 30, 1997, 3:16:00pm.

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Primary Examiner—Valencia Martin-Wallace*Assistant Examiner*—Julie Kasick**(57) ABSTRACT**

A system and method for facilitating the sale of a lottery ticket online includes and involves a data storage system and a data processing system. The data storage system is used for storing information related to a lottery ticket purchased online and to a purchaser of the lottery ticket. The lottery ticket includes a lottery game value. The data processing system is coupled to the data storage system and is operative to receive an online request from the purchaser to purchase the lottery ticket, to generate a secure lottery ticket purchase code, and to issue a purchase confirmation notice related to the lottery ticket to the purchaser. The purchase confirmation notice includes the secure lottery ticket purchase code. The data processing system is further operative to store the information and the lottery ticket purchase code in the data storage system.

26 Claims, 12 Drawing Sheets

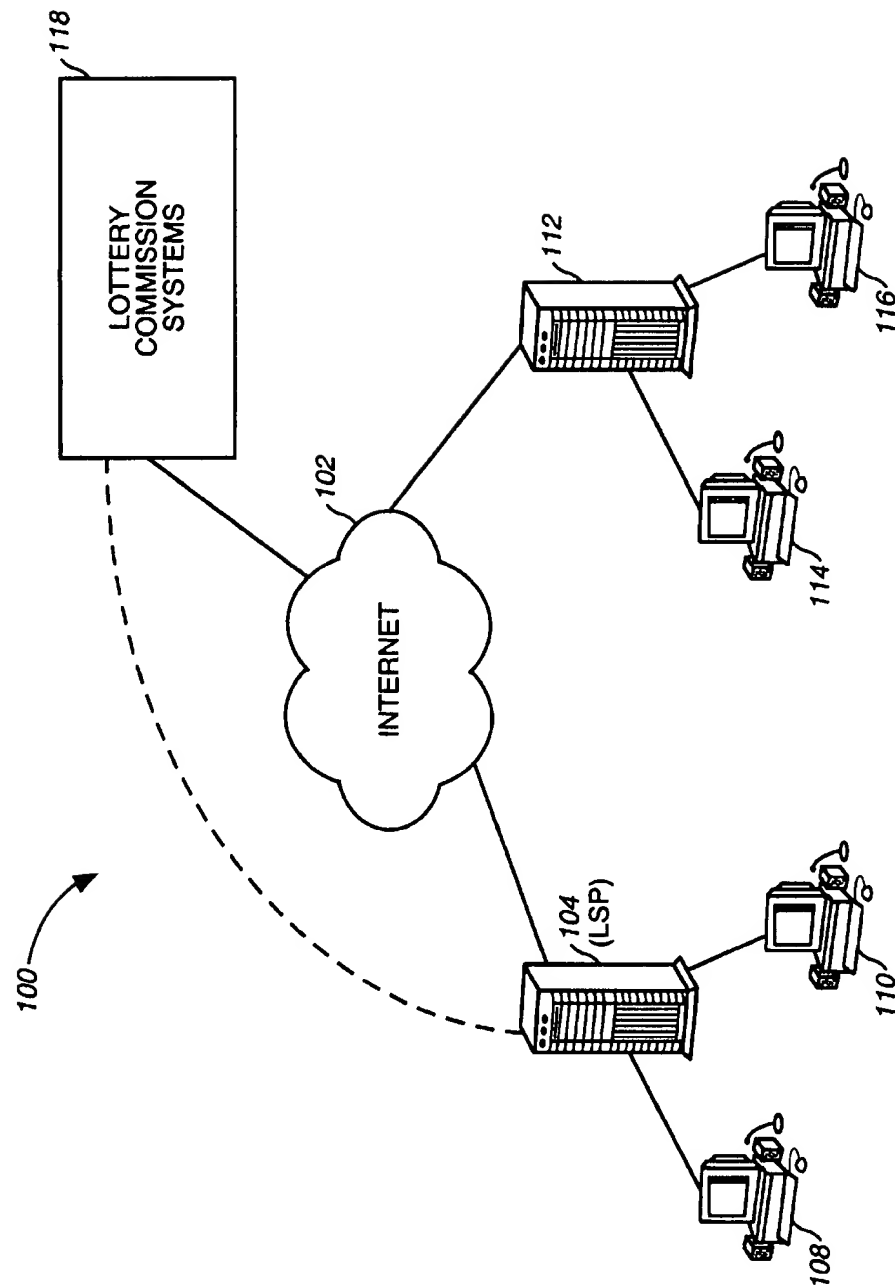
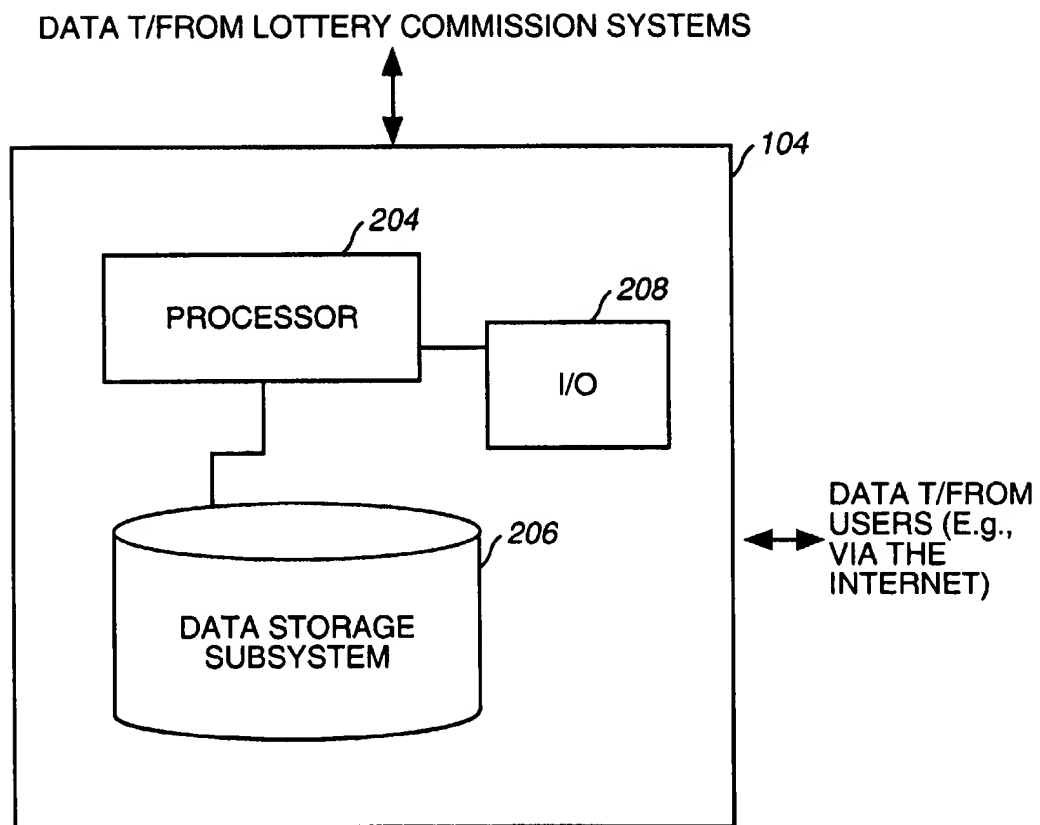
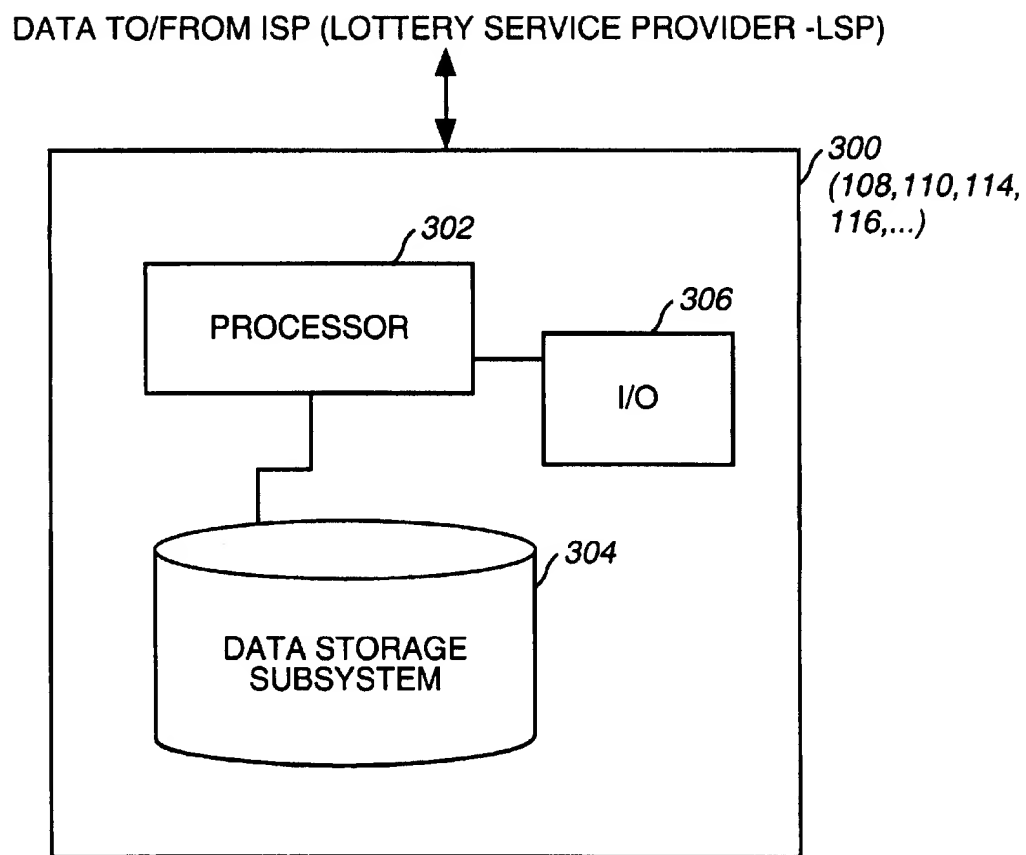
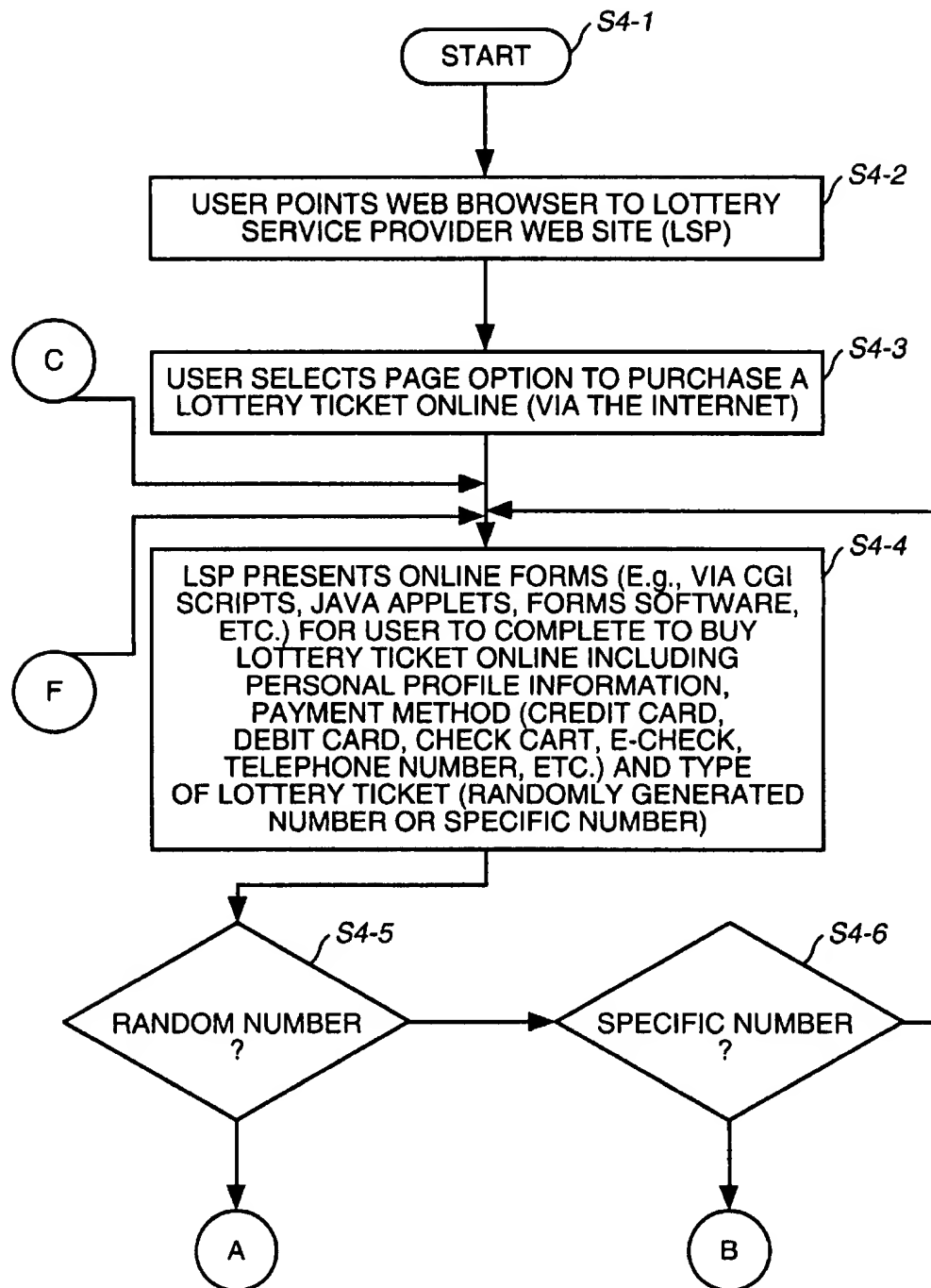


FIG. 1

**FIG. 2**

**FIG. 3**

**FIG. 4A**

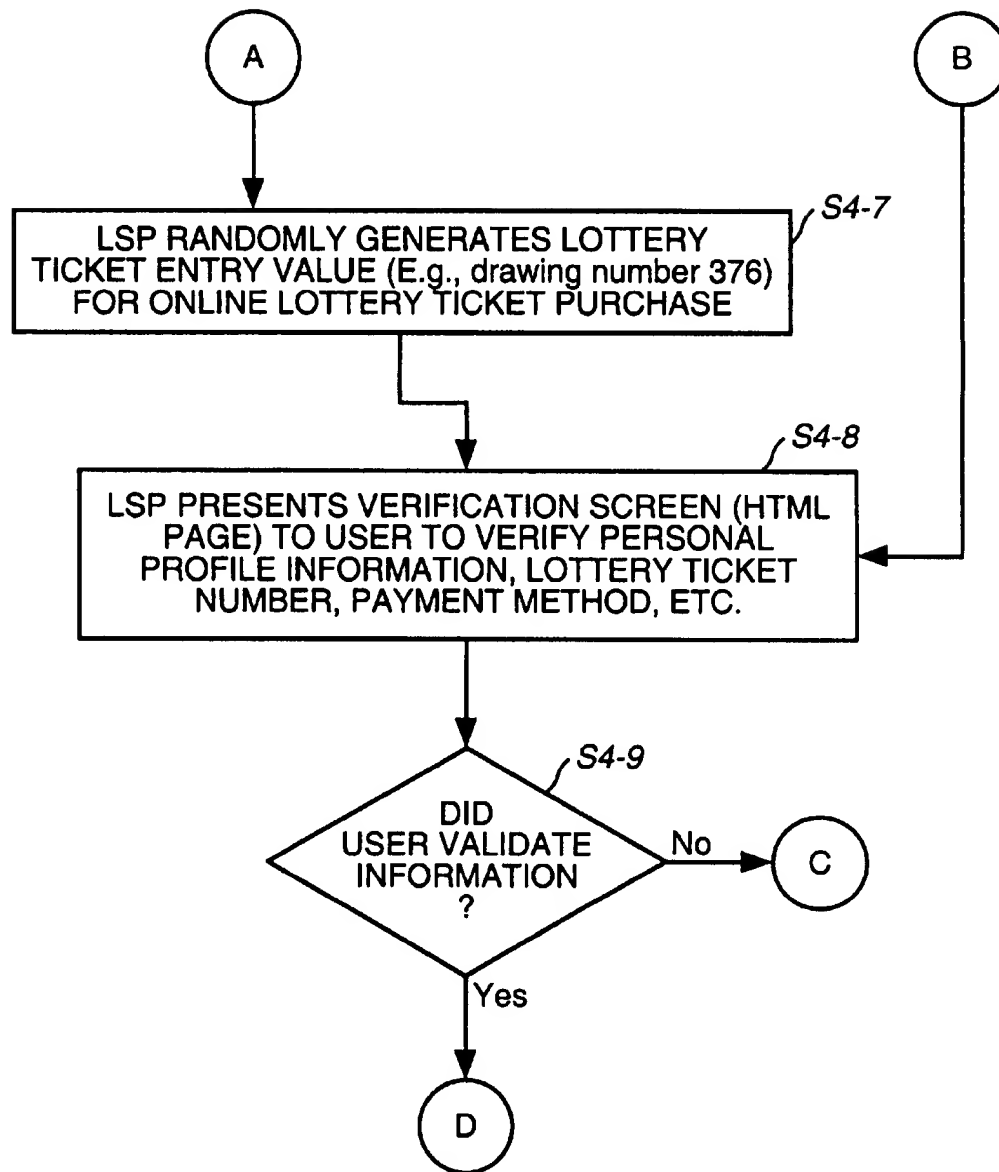


FIG. 4B

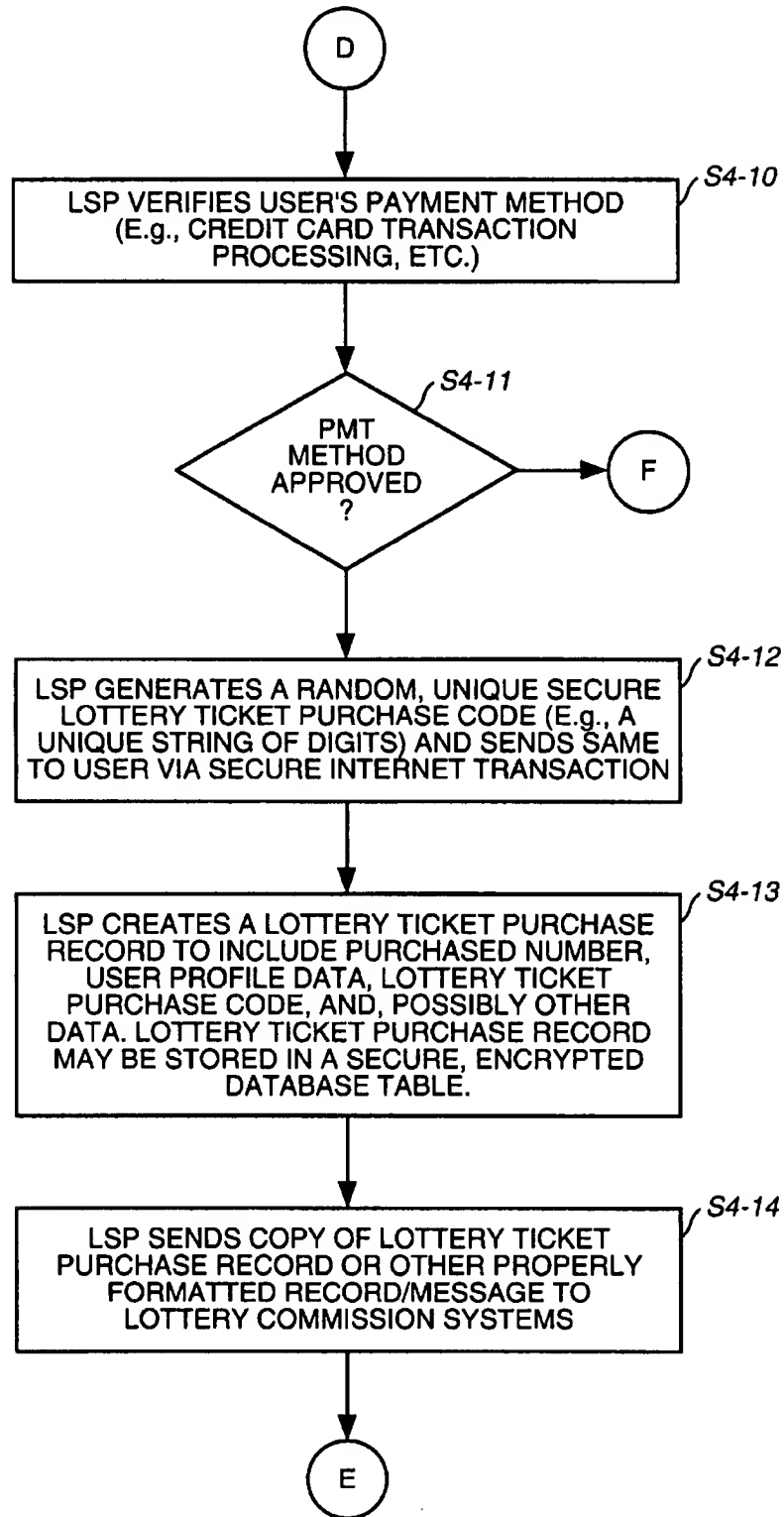
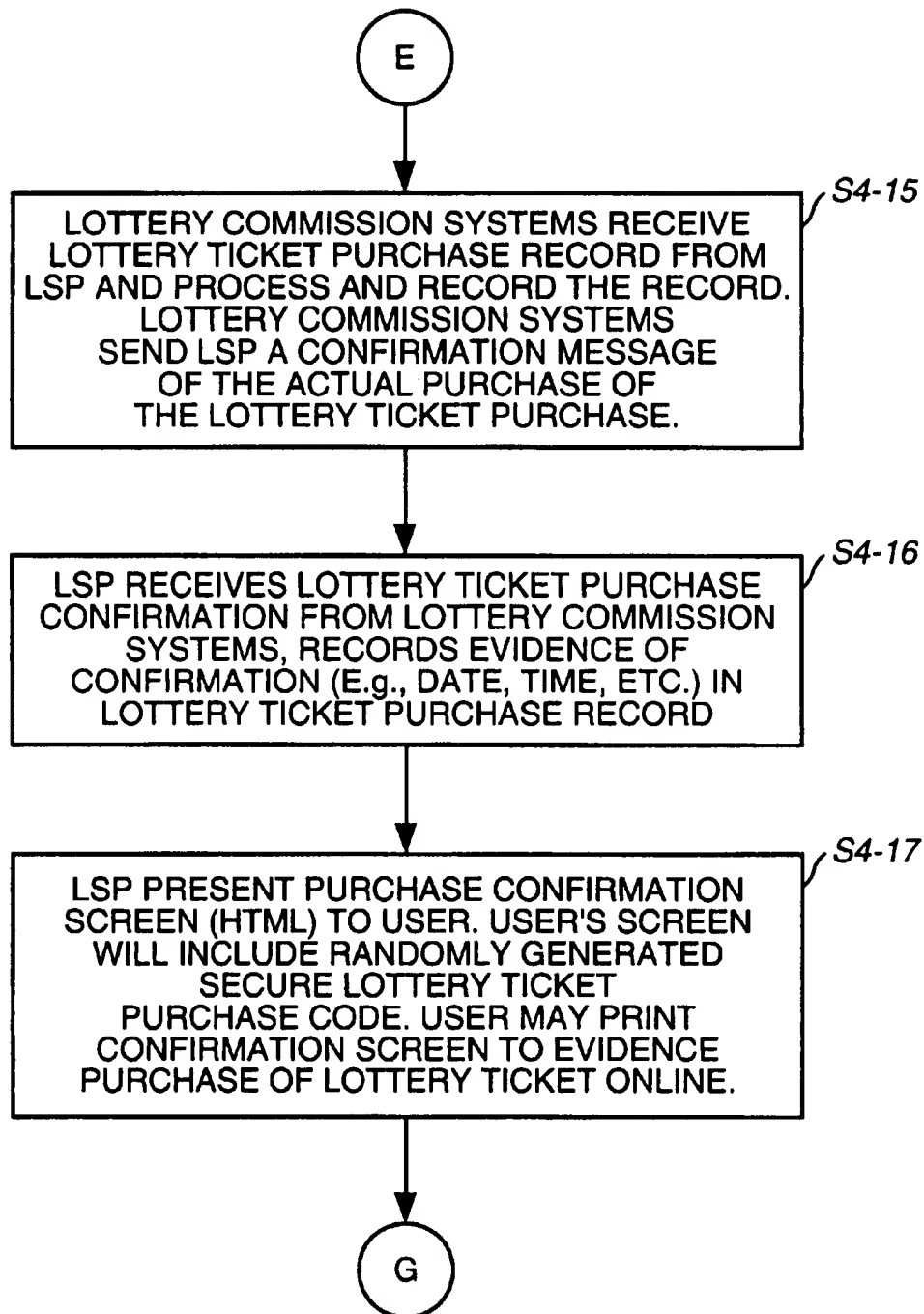
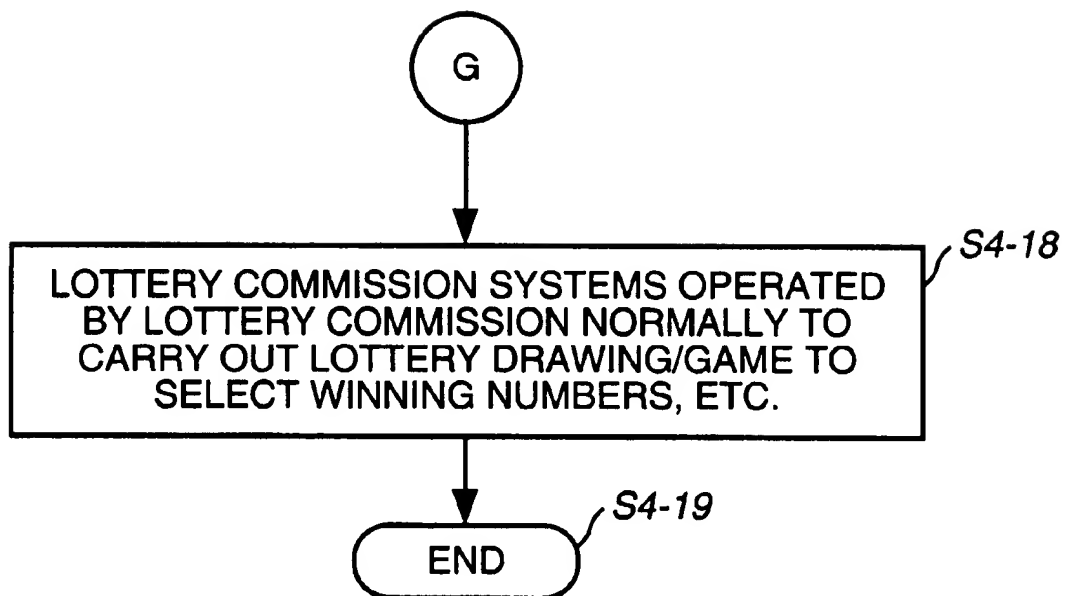
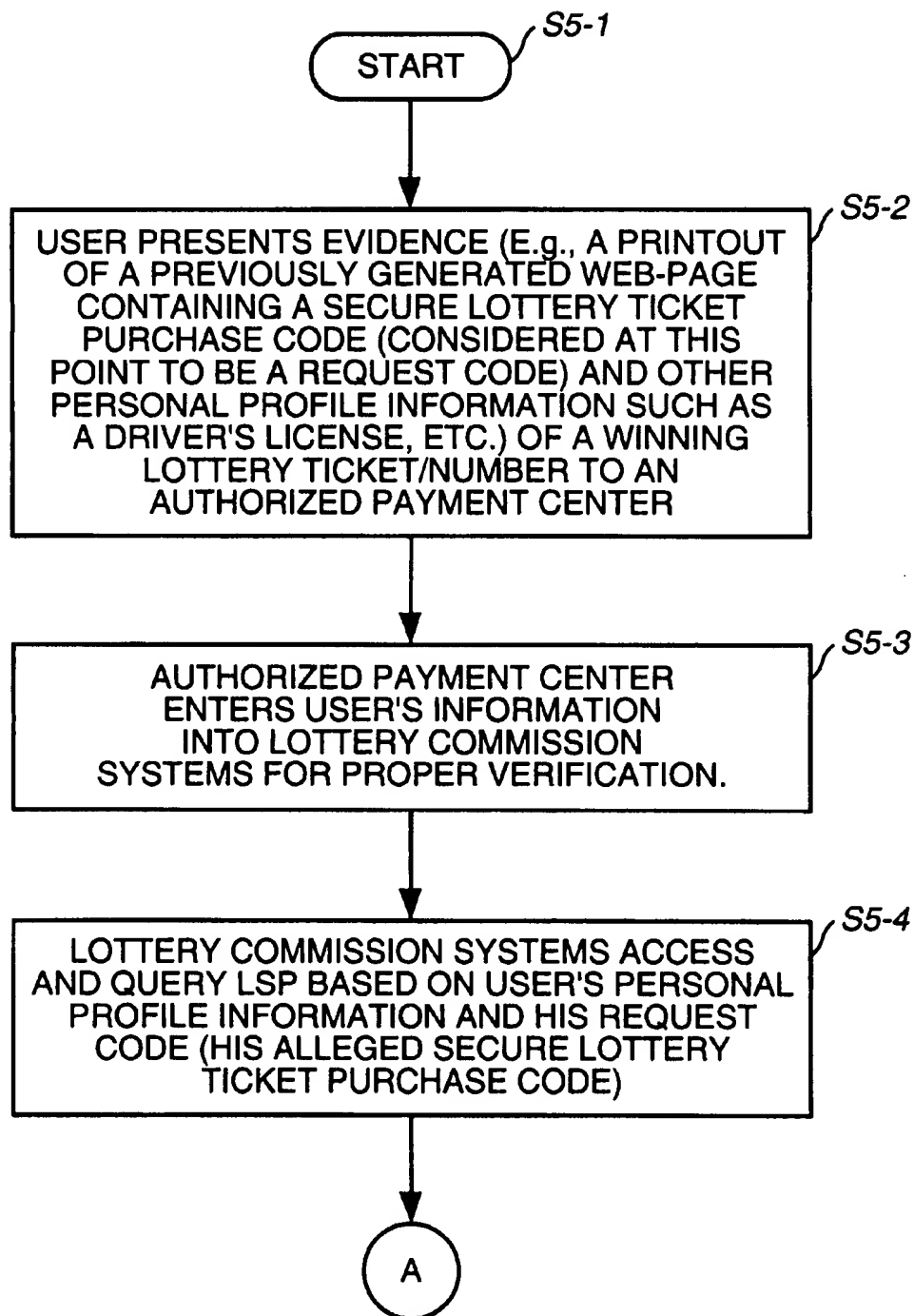
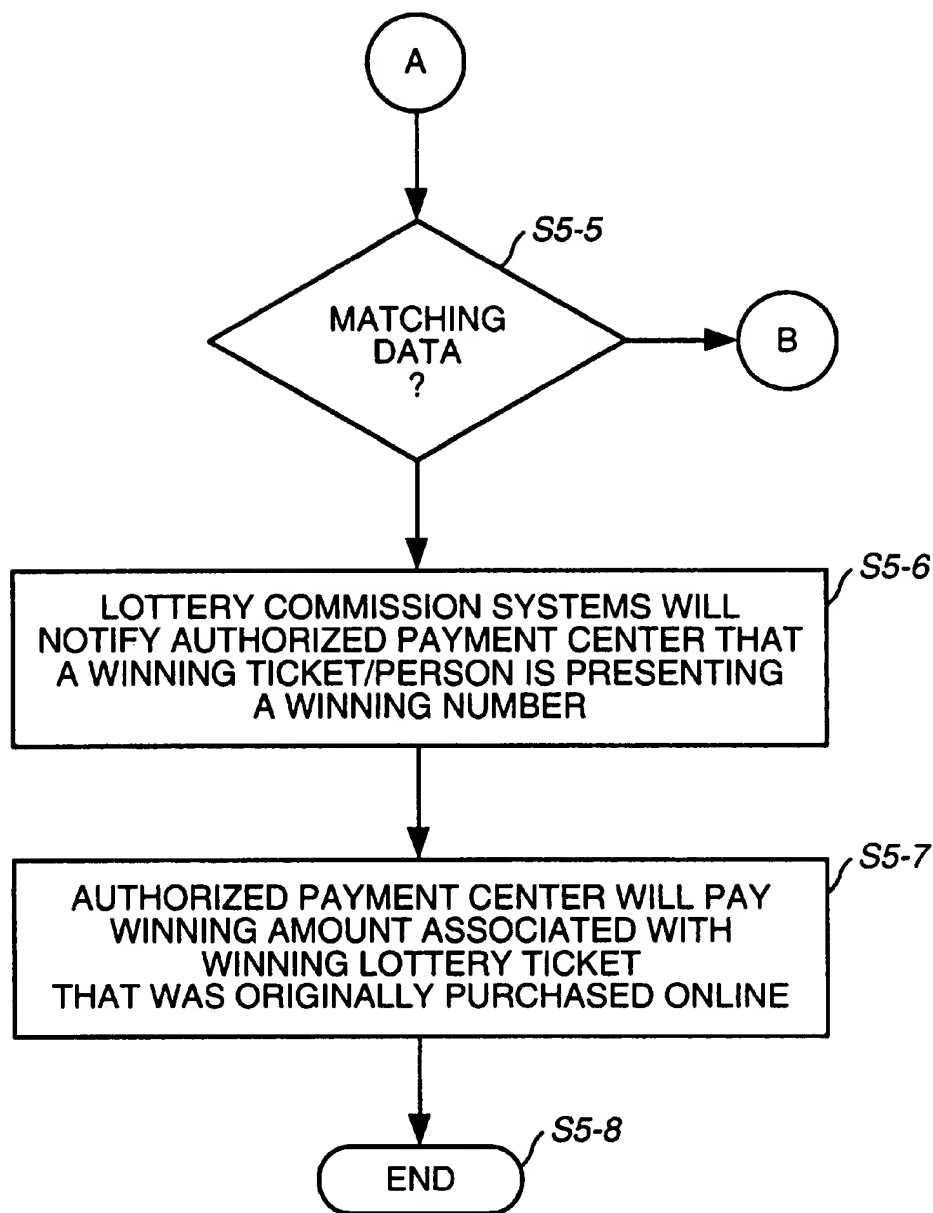


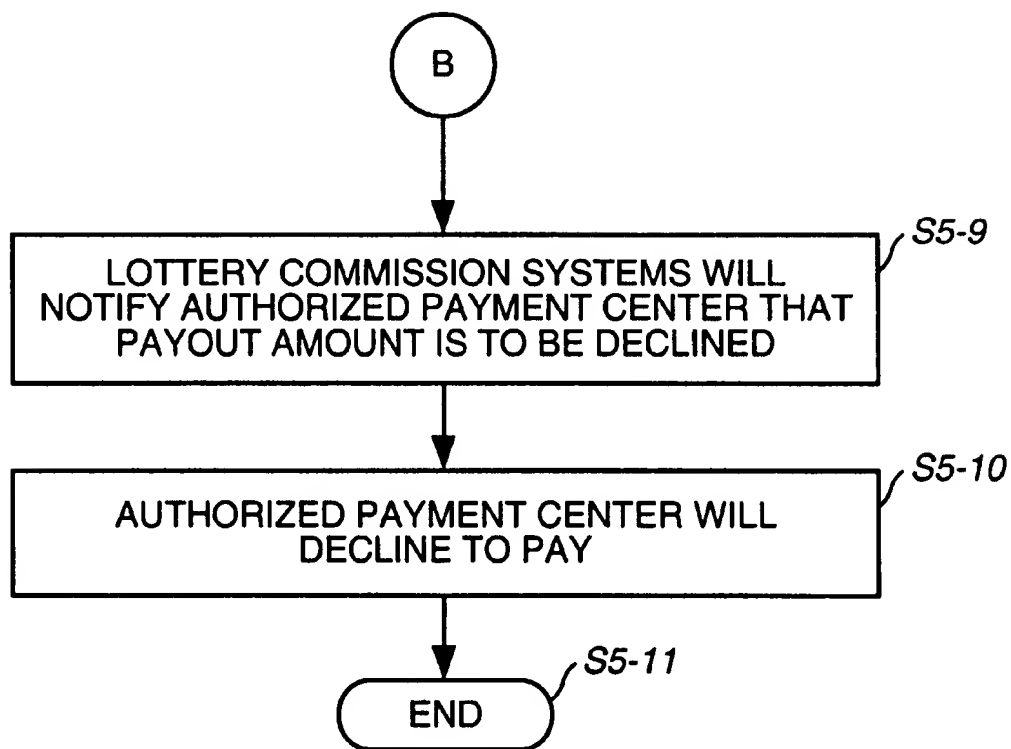
FIG. 4C

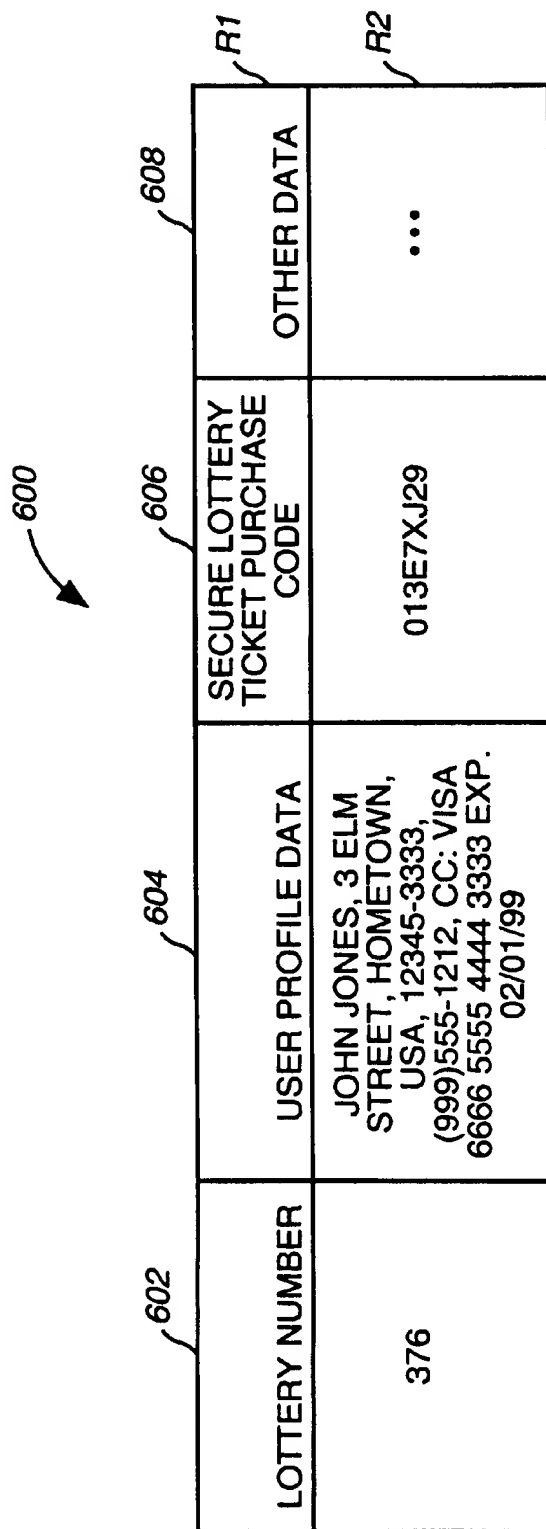
**FIG. 4D**

**FIG. 4E**

**FIG. 5A**

**FIG. 5B**

**FIG. 5C**



The diagram shows a data structure 600, represented as a table with four columns. The columns are labeled 602, 604, 606, and 608. The first column (602) is labeled 'LOTTERY NUMBER' and contains the value '376'. The second column (604) is labeled 'USER PROFILE DATA' and contains the text 'JOHN JONES, 3 ELM STREET, HOMETOWN, USA, 12345-3333, (999)555-1212, CC: VISA 6666 5555 4444 3333 EXP. 02/01/99'. The third column (606) is labeled 'SECURE LOTTERY TICKET PURCHASE CODE' and contains the value '013E7XJ29'. The fourth column (608) is labeled 'OTHER DATA' and contains an ellipsis '...'. The entire table is enclosed in a bracket labeled 600. The first two columns are grouped under a bracket labeled R1, and the last two columns are grouped under a bracket labeled R2.

602 LOTTERY NUMBER	604 USER PROFILE DATA	606 SECURE LOTTERY TICKET PURCHASE CODE	608 OTHER DATA
376	JOHN JONES, 3 ELM STREET, HOMETOWN, USA, 12345-3333, (999)555-1212, CC: VISA 6666 5555 4444 3333 EXP. 02/01/99	013E7XJ29	...

FIG. 6

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SYSTEM AND METHOD FOR FACILITATING THE PURCHASE AND SALE OF LOTTERY TICKETS ONLINE

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to systems and methods that are used to sell lottery tickets.

2. Description of the Related Art

Since its creation, the Internet has been considered to be a viable and effective system for distribution of information to large numbers of people. Despite its wide acceptance as an information distribution system, however, Internet service providers have faced significant challenges in terms of establishing sites and corresponding services that can enhance the features of the Internet and which can be used to generate revenue. In many respects, the challenges facing Internet service providers (ISPs) result from difficulties in establishing and operating successful sites that can reliably generate revenue related to repeat business. As such, since most information on the Internet is distributed for free, it has become difficult to establish Internet sites (e.g., web sites) that attempt to charge online customers for information and other services.

As ISPs and other service providers wrestle with creating and establishing sites that can reliably generate revenue from repeat sales network users have become increasingly reliant on the "free" nature of the Internet. To establish revenue generating sites, ISPs have established a wide range of online service offerings ranging from the sale of travel related services (e.g., airline tickets) to subscriptions for network content channels that deliver otherwise unavailable information. In most cases, however, such service offerings are restricted by fierce competition and availability of similar, free information from other network sites.

A service area that has not been tapped by ISPs is the sale and distribution of lottery tickets on behalf of state-run lottery commissions. Currently, there exists no system for the sale and distribution of lottery tickets online. It is well known that lottery ticket sales generate large sums of money for state-run programs. And, it is well-known that sales of lottery tickets create significant commission revenue for authorized lottery ticket selling agents. Such sales result from repeat customers who regularly purchase tickets. Unfortunate for ISPs, is the fact that many of the lottery tickets sold by lottery ticket sales agents are bearer instruments—the bearer of a winning ticket is entitled to receive payment if his ticket contains a winning number or code relative to a particular lottery game or drawing. The Internet does not lend itself to sale and distribution of instruments (official or otherwise) like bearer instruments because there are no ways to ensure that a document printed by a person's printer, for example, is authentic. Accordingly, ISPs have heretofore been unable to establish themselves as lottery ticket sales agents because they have been unable to effectively deal with the nature of lotteries and the conventional, bearer nature of lottery tickets. As such, ISPs have heretofore not been able to establish Internet sites (e.g., web sites) which can be accessed by network users on a regular basis to purchase lottery tickets and which can be used to reliably generate revenue from repeat business and lottery ticket sales commissions.

Thus, there exists a need to provide systems and methods for facilitating the purchase and sale of lottery tickets online. To be viable, such systems and methods must facilitate the sale of lottery tickets without distributing bearer-type tickets and like.

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SUMMARY OF THE INVENTION

The present invention addresses the limitations and problems associated with the related art by providing systems and methods that facilitate the sale of lottery tickets to network users (purchasers) without distributing bearer-type instruments. The systems and methods of the present invention enable lottery ticket sales through generation and recordation of secure lottery ticket purchase codes which may be used to verify the sale of a winning lottery ticket entry. As such, lottery service providers (ISPs authorized to sell lottery ticket entries) may establish and operate Internet (e.g., web) sites that encourage widespread use and repeat sales.

Accordingly, the present invention provides a system and method for facilitating the purchase and sale of a lottery ticket online that includes a data storage system and a data processing system. The data storage system is used for storing information related to a lottery ticket purchased online and to a purchaser of the lottery ticket. The lottery ticket includes a lottery game value. The data processing system is coupled to the data storage system and is operative to receive an online request from the purchaser to purchase the lottery ticket, to generate a secure lottery ticket purchase code, and to issue a purchase confirmation notice related to the lottery ticket to the purchaser. The purchase confirmation notice includes the secure lottery ticket purchase code. The data processing system is further operative to store the information and the lottery ticket purchase code in the data storage system.

According to another aspect of the present invention, a method for facilitating the purchase and sale of a lottery ticket online is provided. The method includes a step of receiving an online request from a purchaser to purchase a lottery ticket in the context of a lottery operated by a lottery authority or lottery commission. The online request includes information related to the purchaser and to a lottery game value to be associated with the lottery ticket. The method also includes the steps of generating a secure lottery ticket purchase code and issuing a purchase confirmation notice related to the lottery ticket to the purchaser. The purchase confirmation notice includes the secure lottery ticket purchase code. The method also includes a step of retrievably storing the information, the lottery game value, and the secure lottery ticket purchase code in a data storage system to be accessed by the lottery authority in operating the lottery.

According to another aspect of the present invention, a system for facilitating a lottery payoff based on a lottery ticket purchased online is provided. The system includes a lottery ticket issuance system that stores information related to a lottery ticket purchased online, a secure lottery ticket purchase code, and a purchaser of the lottery ticket. The lottery ticket has an associated lottery game payoff amount. The system also includes a lottery management system that is operated by a lottery authority and which is coupled to the lottery ticket issuance system. The lottery management system is operative to receive a request from the purchaser to receive the payoff amount associated with the lottery ticket. The request includes a request code. The management system also is operative to access and query the lottery ticket issuance system to determine if the request code matches the secure lottery ticket purchase code, and to receive a match status message from the lottery ticket issuance system which will indicate whether the request code matches the secure lottery ticket purchase code. Also, the management system is operative to notify the lottery authority that the payoff

amount may be paid to the purchaser when the request code matches the secure lottery ticket purchase code.

According to another aspect of the present invention, a method for facilitating a lottery payoff based on a lottery ticket purchased online is provided. The method includes the steps of receiving a request from a purchaser to receive a payoff amount associated with a lottery ticket purchased online. The request includes a request code. The method also includes the steps of accessing and querying a lottery ticket issuance system to determine if the request code matches a previously stored secure lottery ticket purchase code, and receiving a match status message from the lottery ticket issuance system. The match status message indicates whether the request code matches the previously stored secure lottery ticket purchase code. The method also includes a step of notifying a lottery authority that the payoff amount may be paid to the purchaser when the request code matches the previously stored secure lottery ticket purchase code.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention is described in detail below with reference to the following drawing figures of which:

FIG. 1 is a diagram of a system in which lottery tickets may be sold to users online (e.g., via the Internet) according to a preferred embodiment of the present invention;

FIG. 2 is a block diagram of the lottery service provider's data processing system as originally depicted in FIG. 1;

FIG. 3 is a block diagram of a user's personal data processing system like those shown in FIG. 1;

FIG. 4A is a flowchart that illustrates a process carried out within the system depicted in FIG. 1 to facilitate the purchase and sale of lottery tickets online according to a preferred embodiment of the present invention;

FIG. 4B is a continuation flowchart of the flowchart started in FIG. 4A;

FIG. 4C is a continuation flowchart of the flowchart depicted in FIGS. 4A-4B;

FIG. 4D is a continuation flowchart of the flowchart depicted in FIGS. 4A-4C;

FIG. 4E is a continuation flowchart of the flowchart depicted in FIGS. 4A-4D;

FIG. 5A is flowchart that illustrates a process carried out within the system depicted in FIG. 1 to verify previous lottery ticket purchases made online according to a preferred embodiment of the present invention;

FIG. 5B is a continuation flowchart of the flowchart started in FIG. 5A;

FIG. 5C is a continuation flowchart depicted in FIGS. 5A-5B; and

FIG. 6 is a diagram of a database table used for storing information related to a lottery ticket purchased online which may be propagated with data and processed in accordance with the steps illustrated in flowcharts depicted in FIGS. 4A-4E and 5A-5C.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention is now discussed in detail with regard to the drawing figures that were briefly described above. A definitions section is followed by a discussion of the structural and operational aspects of the present invention. Unless otherwise indicated, like parts and processes are referred to with like reference numerals.

DEFINITIONS

The following terms shall have the following meanings in the context of the present invention.

The term "lottery" means any legally authorized drawing game of chance that involves the purchase and sale of game entries. Each game entry or "entry" includes an entry value such as a number, code, pattern, or string of characters (alpha, numeric, symbol, or otherwise) that may be selected or picked (or unveiled such as by "scratching off") by a purchaser of such an entry or which may be generated automatically (e.g., randomly generated numbers, etc.). Exemplary lotteries include the Texas State Pick-3 lottery and the Maryland State Pick-4 lotteries. In both examples, an entry in the lotteries will include a number which a purchaser picks or which is automatically generated and for which the purchaser pays an entry fee to place a bet that the picked number will be drawn during a drawing to be held on a specific date and at a specific time. If the purchaser's number or entry is drawn, he may visit an authorized payoff agent (authorized payment center) and receive payment relative to his lottery entry based on pre-determined odds.

The term "lottery ticket" means a confirmation notice that is submitted to a network user or purchaser of an entry into a lottery drawing managed by a lottery commission (e.g., a state-run lottery commission or authority) in conjunction with a secure lottery ticket purchase code that may be created, stored, and maintained by a lottery ticket selling agent such as an Internet service provider (ISP) that is authorized by a lottery commission to sell lottery tickets online. Accordingly, while the present invention contemplates the sale of lottery tickets which may be distributed to a purchaser's computer system and printed out thereby on a personal printing device (e.g., a laser printer, an ink-jet printer, etc.) and which may be considered as bearer instruments like conventional store-bought lottery tickets, the present invention requires no physical lottery ticket like conventional paper-form bearer instruments. Accordingly, a lottery ticket according to the present invention includes one that is maintained as a record within a data processing system (e.g., by a lottery service provider—an ISP authorized to sell lottery entries) and which may be claimed by a purchaser of the same who presents proof of ownership (e.g., printouts of confirmation screens, driver's licenses, passwords and other secure identification (PIN) codes, etc.) along with a secure lottery ticket purchase code to a lottery payoff agent or to an authorized payment center.

STRUCTURAL ASPECTS OF THE PRESENT INVENTION

In view of the aforementioned definitions related to the present invention, reference is now made to the drawing figures briefly described above.

Referring now to FIG. 1, depicted therein is a diagram of a system in which lottery tickets may be sold to users online according to a preferred embodiment of the present invention. In particular, system 100 includes a network such as the Internet 102, an ISP 104 which has been authorized by a lottery commission (e.g., a state-run lottery commission or authority) to act as a lottery service provider (LSP), an ISP 112, lottery commission systems 118 which may be operated by a state-run lottery commission, and an exemplary user population further including users 108, 110, 114, and 116.

LSP 104 includes data processing systems to allow data communications via the HTTP (hyper-text transfer protocol) via the world wide web (WWW) on the Internet. Accordingly, LSP 104 preferably maintains a web site which

may be accessed via the Internet or directly. That is, users like users 108 and 110 may receive their Internet service links directly with the ISP that also acts as LSP 104. Alternatively, users like users 114 and 116 may receive their Internet service links from non-LSP ISPs like ISP 112 and are therefore required to navigate to LSP 104 via the Internet 102 to purchase lottery tickets. A detailed description of the components of LSP 104 is found below with regard to FIG. 2.

Users 108, 110, 114, and 116 are equipped with personal data processing systems such as multi-media personal computers that allow Internet and web-based communications. A detailed description of the components of a typical personal data processing system that may be used to facilitate the purchase of a lottery ticket online is found below with regard to FIG. 3.

The entities and systems included within system 100 are coupled together in conventional ways which will be immediately understood by those skilled in the art. For example, a user such as user 108 may be coupled to LSP 104 via conventional telephone lines. Additionally, LSP 104 likely will be coupled to the Internet 102 via high-speed telecommunications lines.

In system 100, because of the agency relationship of LSP 104 and a particular lottery commission or authority, LSP 104 must be coupled to lottery commission systems 118. LSP 104 may be coupled to lottery commission systems 118 via the Internet 102 and/or via dedicated telecommunications lines as indicated by the dashed line between LSP 104 and lottery commission systems 118. In any case, the coupling of LSP 104 to lottery commission systems 118 to allow for secure data communications will be readily understood by those skilled in the art.

In system 100, LSP 104 may be considered as a lottery ticket issuance system and lottery commission systems 118 may be considered as lottery management systems which are operated by a lottery commission or authority. Accordingly, an entity that operates LSP 104 may collect sales commissions from the online sale of lottery tickets, much like conventional stores receive commissions for the sales of paper-based lottery tickets.

It should be understood that although FIG. 1 illustrates an exemplary arrangement and number of components, the present invention is not so restricted. For example, many more systems and users may be included within a particular system that facilitates the purchase and sale of lottery tickets online such as via the Internet.

Referring now to FIG. 2, depicted therein is a block diagram of the lottery service provider's data processing system as shown in FIG. 1. In particular, LSP 104 includes an automatic data processing system that is configured to support data communications between users such as via the Internet 102 and data communications between lottery commission systems 118 such as via the Internet or through other input/output facilities over dedicated communications links. As such, LSP 104 includes one or more processors 204, a data storage subsystem 206 (e.g., one including disk storage, etc.), and input/output (I/O) facilities 208 to enable data communications as previously described.

A suitable data processing system that may be used to implement LSP 104 is a SUN SPARC SYSTEM (e.g., SPARC 1000) that is configured to run the SUN SOLARIS operating system which are manufactured and marketed by SUN MICROSYSTEMS, INC. Other systems of similar or like functionality may be used.

LSP 104 is configured via software control, for example, to act as a web server that has application capabilities to

facilitate the purchase and sale of lottery tickets online. Web server functionality may be instantiated through use of appropriate web server software packages like those manufactured and marketed by MICROSOFT CORPORATION and NETSCAPE CORPORATION. Since LSP 104 will provide the ability to take and process payments relative to lottery ticket sales, LSP 104 may be outfitted with appropriate electronic commerce server software which may provide secure commerce capabilities (e.g., secure credit card transactions, secure debit card transactions, electronic check transactions, etc.). Such electronic commerce server software may include software packages which are manufactured and marketed by MICROSOFT CORPORATION and NETSCAPE CORPORATION.

In addition to the lottery ticket sales capabilities of LSP 104 to facilitate lottery ticket purchases online, LSP 104 should be outfitted with appropriate database management software programs and applications to facilitate the tracking of lottery ticket purchases including the recordation and storage of names and addresses of purchases (network users who purchase lottery tickets online), payment information, lottery ticket entry information (e.g., a PICK-3 number, etc.), and a secure lottery ticket purchase code that LSP 104 is configured to generate and maintain relative to a particular online lottery ticket purchase. A suitable database management system that may be used is the ORACLE V.7.0 database management package that is manufactured and marketed by ORACLE CORPORATION. A table structure that may be used to store the aforementioned or similar information is shown in FIG. 6 which is discussed below.

In addition to the lottery ticket sales capabilities and database management capabilities of LSP 104, LSP 104 is configured with computer software routines to provide online forms to users via the Internet 102 such as those which are supported by CGI scripts to facilitate online entry of user responses (e.g., lottery ticket numbers, user names, credit card numbers, etc.). Additionally, LSP 104 is configured with software routines and programs to enable the creation of secure lottery ticket purchase codes (e.g., random strings of numbers and letters which may serve as confirmation codes) and random numbers that are generated in formats that may be used as lottery ticket entry values (e.g., drawing values like a specific Pick-3 number or game value), etc. Such functionality is further described with regard to the flowcharts shown in FIGS. 4A-4E which will be immediately understood by those skilled in the art of computer programming after review of the present invention as described herein.

The communications carried between LSP 104 and a user's personal computer system to facilitate the sale and purchase of a lottery ticket online may be carried out using secure socket layer (SSL) technology. SSL technology will be readily understood by those skilled in the art of networking and open standards technologies and protocols.

Referring now to FIG. 3, depicted therein is a block diagram of a user's personal data processing system like those shown in FIG. 1. In particular, personal data processing system 300 may be operated by a user such as users 108, 110, 114, and 116 to facilitate an online purchase of a lottery ticket according to the present invention. System 300 includes a processor 302, a data storage subsystem 304, and an I/O facility 306. System 300 is configured to facilitate data communications between an ISP like LSP 104 (FIG. 1).

A suitable personal data processing system that may be used to implement system 300 is a personal computer system manufactured and marketed by COMPAQ COM-

PUTER CORPORATION. Such a system may be operated in accordance with the WINDOWS 95 operating system which is manufactured and marketed by MICROSOFT CORPORATION.

System 300 is configured to be coupled to the Internet 102 via a phone line (such as by way of a modem device—not shown), a network connection (such as by way of a network interface device—not shown), a cable modem device (not shown) or via some other form of network coupling arrangement. Once coupled to the Internet 102 via an ISP such as LSP 104, system 300 will be able to support Internet and web based communications through use of a web-browser software package which supports HTTP communications and related functionality (e.g., forms, etc.). A suitable web-browser software package that may be used to facilitate network communications is the NETSCAPE COMMUNICATOR BROWSER SUITE (V.4.0) which is manufactured and marketed by NETSCAPE COMMUNICATIONS CORPORATION.

To facilitate secure network communications within system 300 and an appropriate browser software package, a secure certificate will likely have to be obtained from a digital certificate supplier. Such secure certificates will allow a user of system 300 to engage in secure, encrypted network communications which are necessary to provide secure electronic commerce, etc., and which are used within the present invention to facilitate the purchase and sale of lottery tickets online. A suitable secure digital certificate that may be used within the present invention is one created and distributed by VERISIGN at www.verisign.com on the Internet or one of other similar or like functionality.

OPERATIONAL ASPECTS OF THE PRESENT INVENTION

The structures depicted in FIGS. 1–3 are configured to operate together to facilitate the purchase and sale of lottery tickets online according to the present invention. The requisite and salient operations to bring about such functionality and services are illustrated in FIGS. 4A–4E. More particularly, the operations depicted in FIGS. 4A–4E, in many respects, are intended to be carried out, as indicated above, via computer software. Such computer software and, in particular, the programming constructs necessary to bring about such operations will be readily apparent to those skilled in the art after reviewing and understanding the operations illustrated in FIGS. 4A–4E.

Referring now to FIG. 4A, depicted therein is a flowchart that illustrates a process carried out within the system depicted in FIG. 1 to facilitate the purchase and sale of lottery tickets online according to a preferred embodiment of the present invention. Processing starts at Step S4-1 and immediately proceeds to Step S4-2.

At Step S4-2, a user will point his browser software to a LSP 104 managed web site to purchase a lottery ticket online. Thereafter, at Step S4-3, the user will select a page or option indicating his desire to purchase a lottery ticket online.

Next, at Step S4-4, LSP 104 will present and transmit a form for the user to complete to purchase a lottery ticket online. The form may ask for user profile information (e.g., name, address, telephone number, etc.), payment method (e.g., credit card, etc.) and number, a lottery ticket entry value (e.g., a PICK-3 number, a PICK-4 number, or an option to have a randomly generated number assigned, etc.). Such form delivery and the processing of the same (e.g., via CGI scripts Java, forms software clients, etc.) will be readily

understood by those skilled in the art. It should be noted that at secure web data communications may be established at Step S4-4 through use of SSL and/or other security processes such as through use of a digital certificate maintained by the user. Such secure data communications may be used to facilitate secure electronic commerce related to credit card transactions, etc., which will be readily understood by those skilled in the art.

Next, at Step S4-5, LSP 104 will determine from completed form data from the user received, for example, via the Internet 102, whether the user desires to have a randomly generated lottery ticket value assigned to his lottery ticket purchase. If a random lottery number is desired, processing proceeds as illustrated at the top of FIG. 4B. If not, processing proceeds to Step S4-6.

At Step S4-6, LSP 104 will determine from the user's entered form data, if the user desires to purchase a lottery ticket for a specific number (e.g., a specific PICK-3 number like "376"). If a specific number is desired, processing proceeds as illustrated at the top of FIG. 4B. If not processing returns to Step S4-4 or until the user terminates the purchase of a lottery ticket online (e.g., via closing his lottery ticket purchase web session, etc.).

At the top of FIG. 4B, a type of lottery ticket purchase has been selected. That is, LSP 104 will know whether the user intends to purchase a randomly generated lottery number or a specific number. If a randomly generated number was desired, processing proceeds to Step S4-7. At Step S4-7, routines within LSP 104 (e.g., application routines to generate random numbers, etc.), will generate a lottery ticket entry number for the user's lottery ticket purchase and processing will proceed to Step S4-8. If a specific number is desired by the user, processing immediately proceeds to Step S4-8. It should be understood that the present invention contemplates local generation of lottery numbers (e.g., by an LSP) and remote generation of lottery numbers (e.g., as in the case of one LSP querying another LSP for number generation, etc.).

At Step S4-8, LSP 104 will present a verification web form to the user for him to verify personal data (e.g., name and address, payment data, lottery ticket entry value, etc.).

Next, at Step S4-9, a determination will be made as to whether the user validated the lottery ticket purchase information. If the user validated his lottery ticket purchase information, processing proceeds as illustrated at the top of FIG. 4C. If not, processing proceeds as illustrated in FIG. 4A (as earlier described).

At Step S4-10 (at the top of FIG. 4C), LSP 104 will verify user's payment method (e.g., engage in credit card, debit card, or other corresponding processing). Next, a determination will be made at Step S4-11 as to whether the user's payment method was approved. If not processing proceeds as illustrated in FIG. 4A (as discussed above). If approved, processing proceeds to Step S4-12.

At Step S4-12, LSP 104 will generate a secure lottery ticket purchase code such as a random, unique security string of digits, etc. LSP 104 will supply the same to the user via the Internet 102 through use of a secure Internet transaction (e.g., via use of SSL, etc.).

Next, at Step S4-13, LSP 104 will create a lottery ticket record including a purchased lottery number, user profile data, and the aforementioned random, unique secure lottery ticket purchase code. The lottery ticket purchase record will be stored in a secure encrypted data base which may be maintained and managed by appropriate database management system software operated by LSP 104. An illustration

of such an encrypted database table is found in FIG. 6 which is discussed below.

Thereafter, at Step S4-14, LSP 104 will send a copy of the lottery ticket purchase record or other properly formatted data structure/message to lottery commission systems 118. And, processing will proceed as illustrated at the top of FIG. 4D.

At Step S4-15 (at the top of FIG. 4D), lottery commission systems 118 will receive a properly formatted lottery ticket purchase record (e.g., a message, etc.) from LSP 104. Lottery commission systems 118 will process and record the corresponding lottery ticket purchase and send LSP 104 a confirmation notice or indication of an actual lottery ticket purchase which recognizes that the same was purchased online via the Internet.

Next, at Step S4-16, LSP 104 will receive the aforementioned purchase confirmation from lottery commission systems 118. LSP 104 will record that confirmation indication in its secure lottery ticket purchase database and, in particular, in the corresponding lottery ticket purchase record.

Next, at Step S4-17, LSP 104 will present a purchase confirmation web page (screen) containing the random, unique secure lottery ticket purchase code to the user via secure communications through the Internet. The user may print the screen received from LSP 104 to evidence his purchase in the event that he has purchased a winning lottery number.

Next, at Step S4-18, lottery commission systems 118 carry out normal operations to select winning lottery numbers (e.g., ping-pong ball selection to derive winning numbers which may be manifested on public television, etc.).

Processing ends at Step S4-19.

The structures depicted in FIGS. 1-3 also are configured to operate together to facilitate the verification of previously purchased lottery tickets according to the present invention. Such verifications may be carried out by an authorized lottery payoff agent, in conjunction with an LSP, to facilitate the proper payment of monies relative to winning lottery numbers and tickets. The requisite and salient operations to bring about such functionality and services are illustrated in FIGS. 5A-5C. More particularly, the operations depicted in FIGS. 5A-5C, in many respects, are intended to be carried out, as indicated above, via computer software. Such computer software and, in particular, the programming constructs necessary to bring about such operations will be readily apparent to those skilled in the art after reviewing and understanding the operations illustrated in FIGS. 5A-5C.

Referring now to FIG. 5A, depicted therein is flowchart that illustrates a process carried out within the system depicted in FIG. 1 to verify previous lottery ticket purchases made online according to a preferred embodiment of the present invention. Processing starts at Step S5-1 and immediately proceeds to Step S5-2.

At Step S5-2, a user (lottery ticket purchaser) presents evidence of a winning lottery ticket number (e.g., a printout of a previously generated web-site page (screen) containing a randomly generated and unique secure lottery ticket purchase code and some other form of personal identification) to an authorized payment center (payoff agent). The presentation of additional personal information may be necessary within the present invention if the user's screen printout is not to be considered to be a bearer-instrument (or one that is immediately negotiable by the bearer).

Next, at Step S5-3, the authorized payment center will enter the user's information into lottery commission systems

118 for verification of the winning number and the identity of the person who is presenting such information.

Next, at Step S5-4, lottery commission systems 114 will access and query LSP 104 based on the user's personal identification information as presented at the authorized payment center (payoff agent). Processing will thereafter proceed at the top of FIG. 5B.

At Step S5-5 (at the top of FIG. 5B), a determination will be made as to whether a match exists between the user's personal identification information (e.g., his personal profile data and secure lottery ticket purchase code) are consistent with the winning ticket (i.e., that was purchased via the Internet). If not, processing proceeds as illustrated at the top of FIG. 5C. This matching operation involves the determination if a previously stored secure lottery ticket purchase code within LSP 104 is the same as an alleged code (which may be referred to as a "request code") proffered by a person seeking to collect on winning lottery amount. In other words, a person should be able to obtain a payoff amount relative to a winning lottery number when and if the person is able to produce evidence of a previously generated and stored secure lottery ticket purchase code to an authorized payment center.

If a matching record exists (i.e., the user is possessed of a winning lottery ticket purchased on line via the Internet), processing proceeds to Step S5-6. There, lottery commission systems 118 will notify the authorized payment center (payoff agent) that a winning lottery ticket purchaser is presenting a valid winning number and that a payoff of funds may be carried out.

Next, the authorized payment center (payoff agent) will pay a corresponding winning payoff amount to the user. (Step S5-7)

Processing ends at Step 5-8.

As indicated in regard to Step S5-5, if no match is determined, processing proceeds as illustrated at the top of FIG. 5C. In particular, at Step S5-9, lottery commission systems 118 will notify the authorized payment center that a payoff is to be declined.

Next, at Step S5-10, the authorized payment center will decline the pay the user. Of course, an error in data communications to and from lottery commission systems 118 may have occurred (e.g., user profile information may not have been entered correctly, etc.). In such a case, the entire process depicted in FIGS. 5A-5C may be repeated.

Processing ends at Step S5-11.

Referring now to FIG. 6, depicted therein is a diagram of a database table used for storing information related to lottery tickets purchased online which may be propagated with data and processed in accordance with the steps illustrated in flowcharts depicted in FIGS. 4A-4E and 5A-5C. Database table 600 may be managed by a database management system operated by LSP 104. In particular, database table 600 shows four columns and two rows. Row R1 contains column headings under which data including LOTTERY NUMBERS, USER PROFILE DATA, SECURE LOTTERY TICKET PURCHASE CODEs, and OTHER DATA may be stored. Row R2 contains actual data related to a lottery ticketed which was purchased online via the Internet. In particular, row R2 indicates that a Mr. John Jones purchased a lottery ticket having a lottery number of 376, and which has been associated with a secure lottery ticket purchase code of "013E7XJ29." The other data column for Mr. Jones' lottery ticket may include date of purchase, payoff amount in dollars, place of purchase, lottery name, lottery management system identification (in the case that

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LSP 104 sells lottery tickets for lotteries maintained by one or more jurisdictions, for example) date of lottery drawing, and/or any other data that may be needed to effectively operate a lottery in which lottery tickets may be purchased online and, possibly, via the Internet. Such other data may change depending on the needs of a particular lottery and the requirements of a particular lottery commission or authority, etc.

Thus, having fully described the present invention by way of example with reference to the attached drawing figures, it will be readily appreciated that many changes and modifications may be made to the invention and to any of the exemplary embodiments shown and/or described herein without departing from the spirit or scope of the invention which is defined in the appended claims.

What is claimed is:

1. A system for facilitating the purchase and sale of a lottery ticket online, comprising:

a data storage system for storing information related to a lottery ticket purchased online and to a purchaser of said lottery ticket, said lottery ticket including a lottery game value, and

a data processing system coupled to said data storage system and operative to receive an online request from said purchaser to purchase said lottery ticket, to generate a secure lottery ticket purchase code in response to the request, and to issue an electronic purchase confirmation notice related to said lottery ticket to said purchaser, said purchase confirmation notice including said secure lottery ticket purchase code, said data processing system further operative to store said lottery ticket purchase code in said data storage system; wherein the information related to the purchaser of the lottery ticket includes personal information of the purchaser, the personal information including at least one of a name, address, and telephone number of the purchaser, the personal information being used by the system to verify a winning lottery ticket by matching the stored information relating to the lottery ticket to the personal information of the purchaser attempting to redeem the winning lottery ticket.

2. The system according to claim 1, wherein said data processing system is further operative to communicate said information and said secure lottery ticket purchase code to a lottery commission system operated by a lottery commission.

3. The system according to claim 2, wherein said data processing system is further operative to receive a confirmation message from said lottery commission system that said lottery ticket has been sold by said lottery commission to said purchaser, and to store said confirmation message from said lottery commission system in said data storage system.

4. The system according to claim 1, wherein said request is received by said data processing system via the Internet.

5. The system according to claim 1, wherein said secure lottery ticket purchase code is a unique, randomly generated string of digits.

6. The system according to claim 1, wherein said purchase confirmation notice is issued to said purchaser via the Internet.

7. The system according to claim 1, wherein said information and said lottery ticket purchase code are stored in a secure, encrypted table within said data storage system.

8. The system according to claim 1, wherein said data processing system is further operative to generate a random

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number, said lottery game value being set based on said random number.

9. A method for facilitating the purchase and sale of a lottery ticket online, comprising the steps of:

receiving an online request from a purchaser to purchase a lottery ticket in the context of a lottery operated by a lottery authority, said request including information related to said purchaser and to a lottery game value to be associated with said lottery ticket;

generating a secure lottery ticket purchase code in response to the online request;

issuing an electronic purchase confirmation notice related to said lottery ticket to said purchaser, said purchase confirmation notice including said secure lottery ticket purchase code;

and retrievably storing said information, said lottery game value, and said secure lottery ticket purchase code in a data storage system to be accessed by said lottery authority in operating said lottery; wherein

the information related to the purchaser of the lottery ticket includes personal information of the purchaser, the personal information including at least one of a name, address, and telephone number of the purchaser, the personal information being used to verify a winning lottery ticket by matching the stored information to the personal information of the purchaser attempting to redeem the winning lottery ticket.

10. The method according to claim 9, further comprising a step of:

communicating said information and said secure lottery ticket purchase code to a lottery commission system operated by said lottery authority.

11. The method according to claim 9, further comprising the steps of:

receiving a confirmation message from said lottery commission system that said lottery ticket has been sold by said lottery authority to said purchaser; and

retrievably storing said confirmation message from said lottery commission system in said data storage system.

12. The method according to claim 9, wherein said online request is received via the Internet.

13. The method according to claim 9, wherein said secure lottery ticket purchase code is a unique, randomly generated string of digits.

14. The method according to claim 9, wherein said purchase confirmation notice is issued to said purchaser via the Internet.

15. The method according to claim 9, wherein said information and said lottery ticket purchase code are stored during said retrievably storing step in a secure, encrypted database table.

16. The method according to claim 9, further comprising the steps of:

generating a random number; and

setting said lottery game value based on said random number.

17. A system for facilitating a lottery payoff based on a lottery ticket purchased online, comprising:

a lottery ticket issuance system storing information related to a lottery ticket purchased online, a secure lottery ticket purchase code, and personal information of a purchaser of said lottery ticket, said lottery ticket having an associated lottery game payoff amount; and a lottery management system operated by a lottery authority and coupled to said lottery ticket issuance system,

13

said lottery management system operative to receive a request from said purchaser to receive said payoff amount associated with said lottery ticket, said request including a request code and personal information, said management system further operative to access and query said lottery ticket issuance system to determine if said request code matches said secure lottery ticket purchase code and said personal information matches the personal information of the purchaser that is stored in the lottery ticket issuance system, to receive a match status message from said lottery ticket issuance system, said match status message indicating whether said request code matches said secure lottery ticket purchase code and the personal information matches the personal information stored in the lottery ticket issuance system, said lottery management system further operative to notify said lottery authority that said payoff amount may be paid to said purchaser when said match status message indicates a match.

18. The system according to claim 17, wherein said secure lottery ticket purchase code is a random, unique string of digits.

19. The system according to claim 17, wherein said lottery ticket issuance system and said lottery management system are coupled via the Internet.

20. The system according to claim 17, wherein said lottery ticket issuance system stores said secure lottery ticket purchase code in a secure database table.

21. The system of claim 17, wherein the personal information of the purchaser includes at least one of a name, address, and telephone number of the purchaser.

22. A method for facilitating a lottery payoff based on a lottery ticket purchased online, comprising the steps of:

14

receiving a request from a purchaser to receive a payoff amount associated with a lottery ticket purchased online, said request including a request code and personal information;

accessing and querying a lottery ticket issuance system to determine if said request code matches a previously stored secure lottery ticket purchase code and if said personal information matches previously stored personal information relating to the purchaser;

receiving a match status message from said lottery ticket issuance system, said match status message indicating whether said request code matches said previously stored secure lottery ticket purchase code and whether the personal information matches the previously stored personal information; and

notifying a lottery authority that said payoff amount may be paid to said purchaser when said request code matches said secure lottery ticket purchase code and said personal information matches the previously stored personal information.

23. The method according to claim 22, wherein said previously stored secure lottery ticket purchase code is a random, unique string of digits.

24. The method according to claim 22, wherein said lottery ticket issuance system is accessed via the Internet.

25. The method according to claim 22, wherein said previously stored lottery ticket purchase code is stored in a secure database table.

26. The method of claim 22, wherein the personal information related to the purchaser includes at least one of a name, address, and telephone number of the purchaser.

* * * * *

EVIDENCE APPENDIX E
COPY OF DICKINSON ET AL. G.B. PATENT NO. 2,147,773

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(51) INT CL⁴

A63F 9/22 G06F 3/153 G06K 11/06

(52) Domestic classification

H4T 4R BRA

G4H 13D 14A 14B 14D 1A TE

(56) Documents cited
None

(58) Field of search
H4T

(54) Lottery game terminal

(57) A lottery game terminal (10) providing a plurality of user selected lottery games is capable of operating in a multiterminal statewide lottery game system. Choice of game and game play is controlled by player manipulation of a light pen (13) to operate any of several soft switches displayed on a game terminal monitor (20). Game play at any time is defined by a plurality of fixed game states. As game play progresses, the game architecture allows the game to move from state to state. Accordingly, a high measure of security is provided by a predictable flow of game control. The game may be accompanied by audible tones, and a meter may be provided for storing an audit transaction. When a winner is declared, a game payout schedule may be displayed.

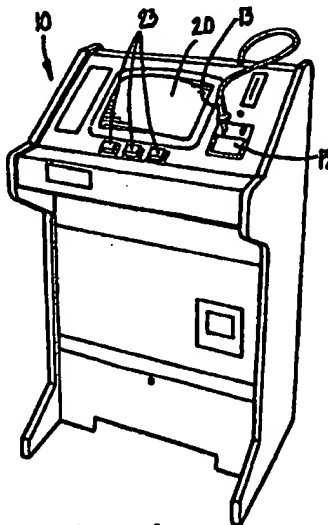


FIG. 1

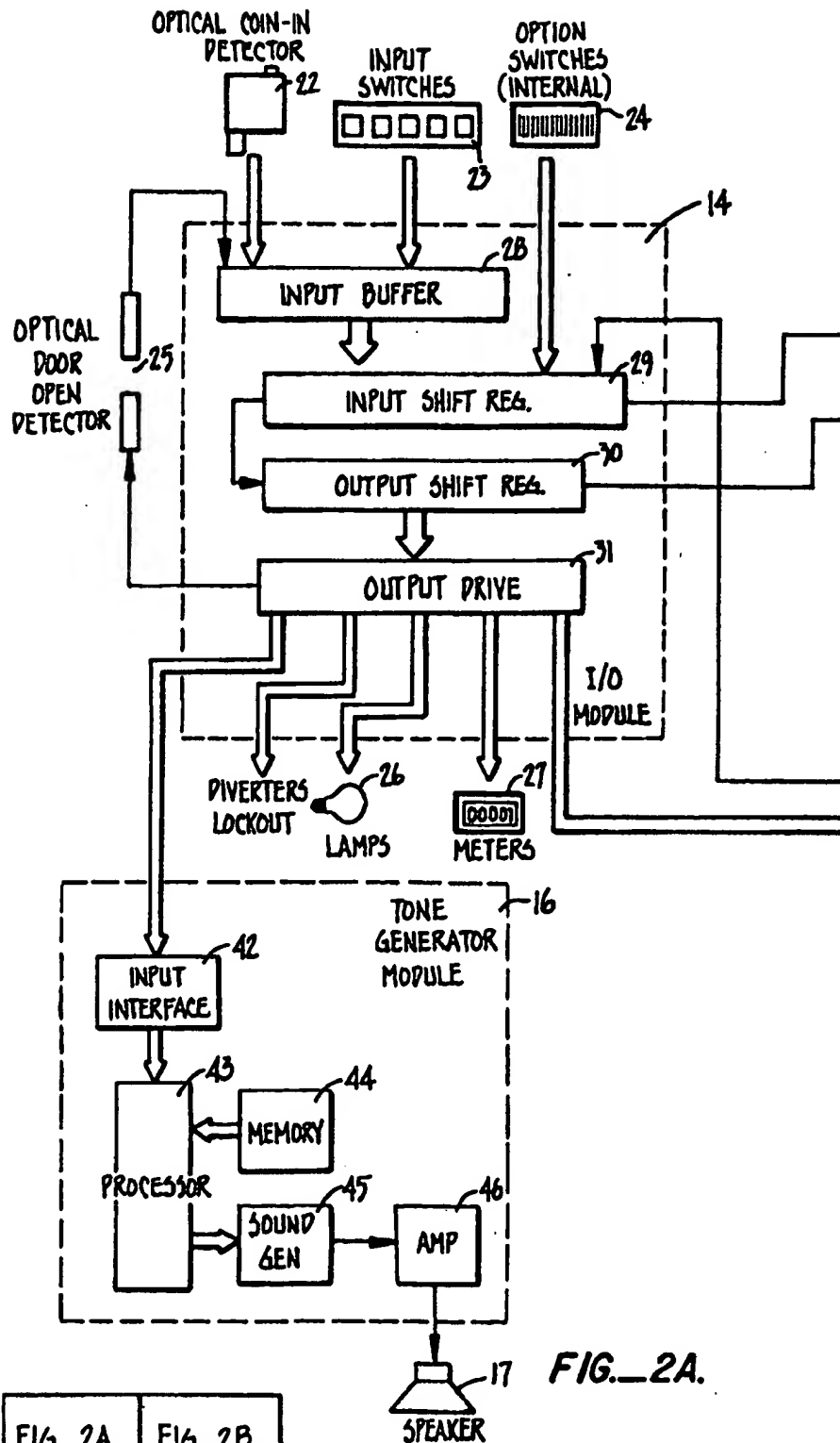


FIG. 2A.

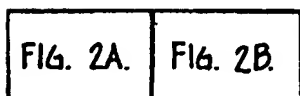


FIG. 2.

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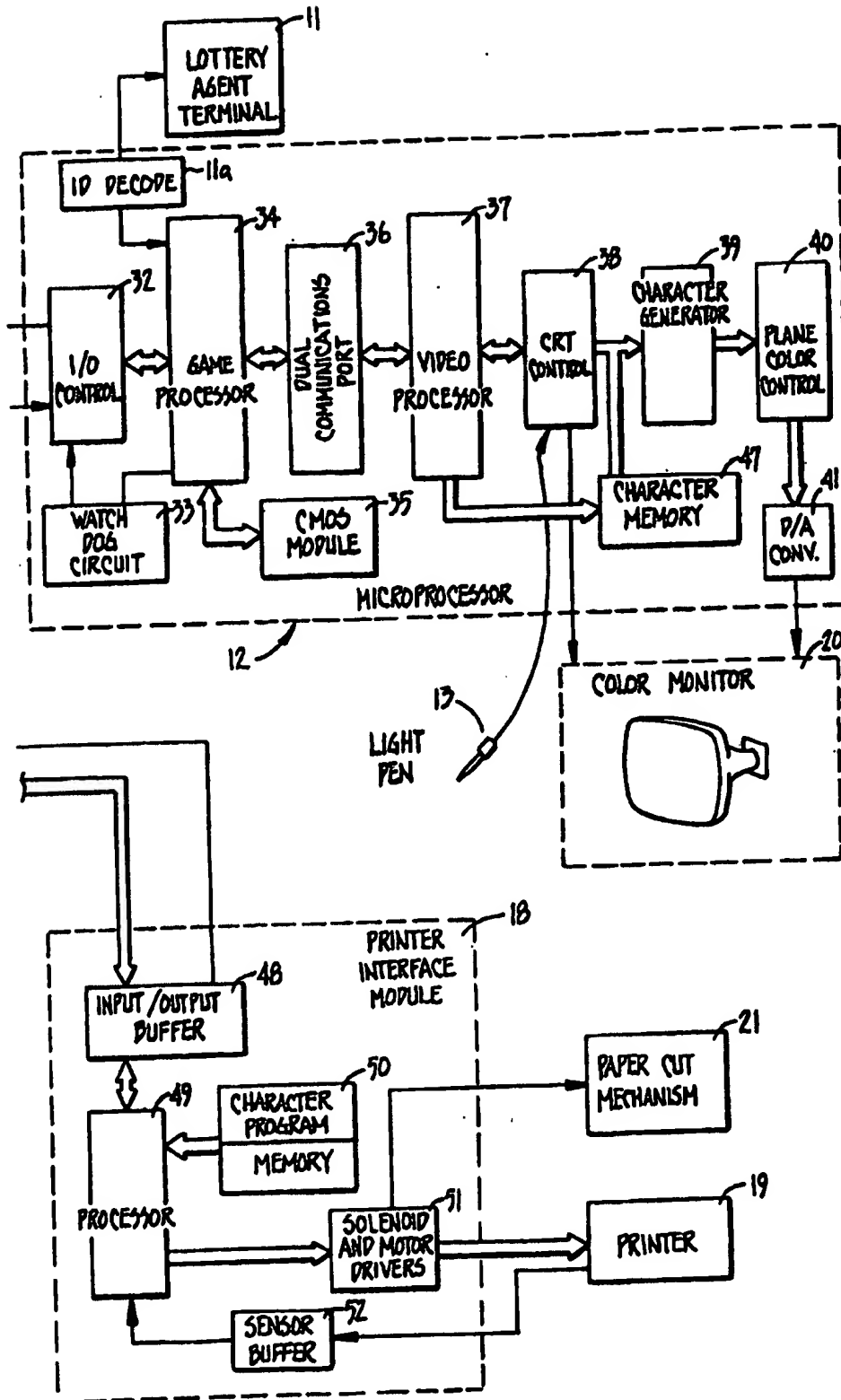


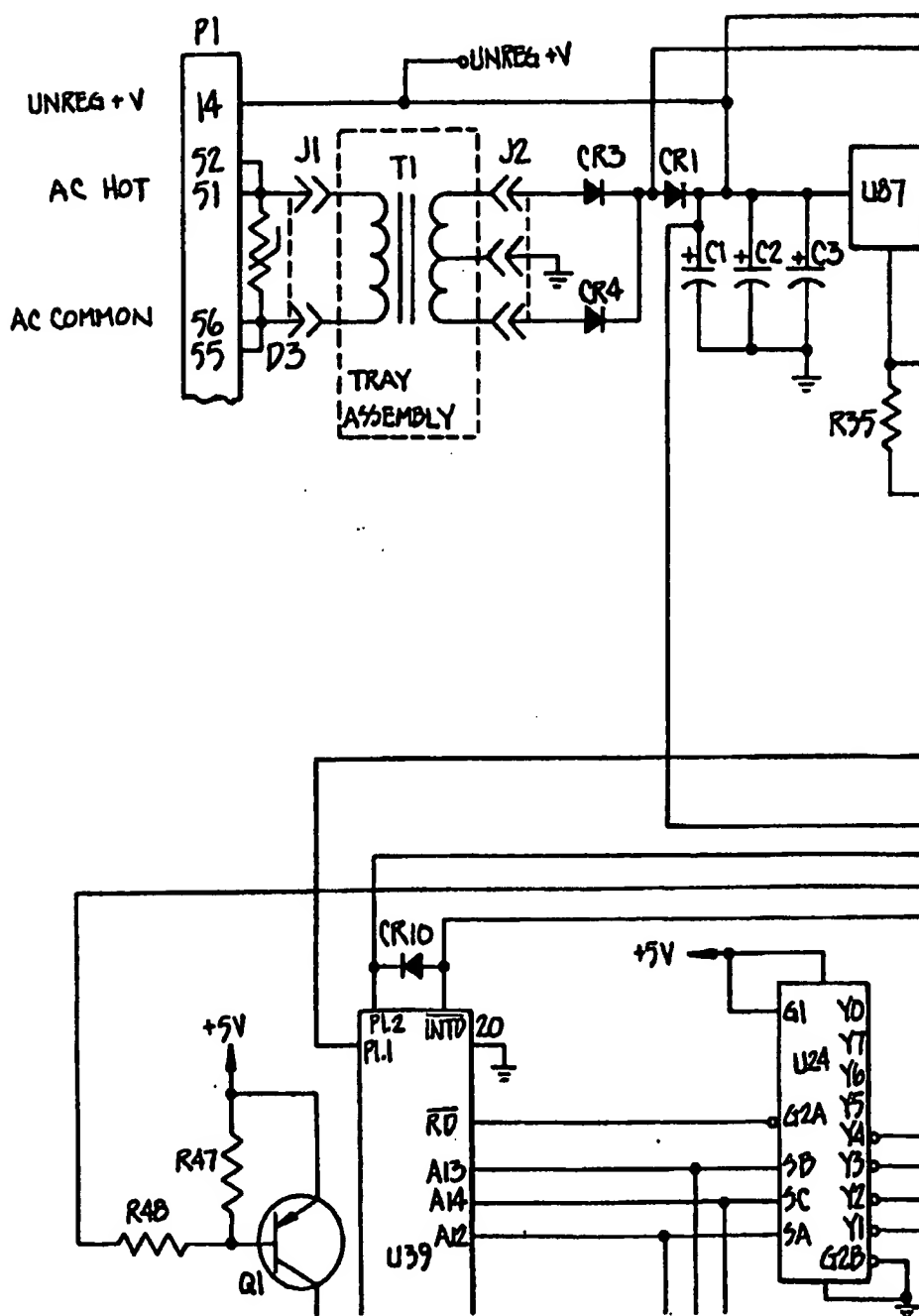
FIG. 2B.

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FIG. 3A.	FIG. 3B.	FIG. 3C.	FIG. 3D.
FIG. 3E.	FIG. 3F.	FIG. 3G.	FIG. 3H.

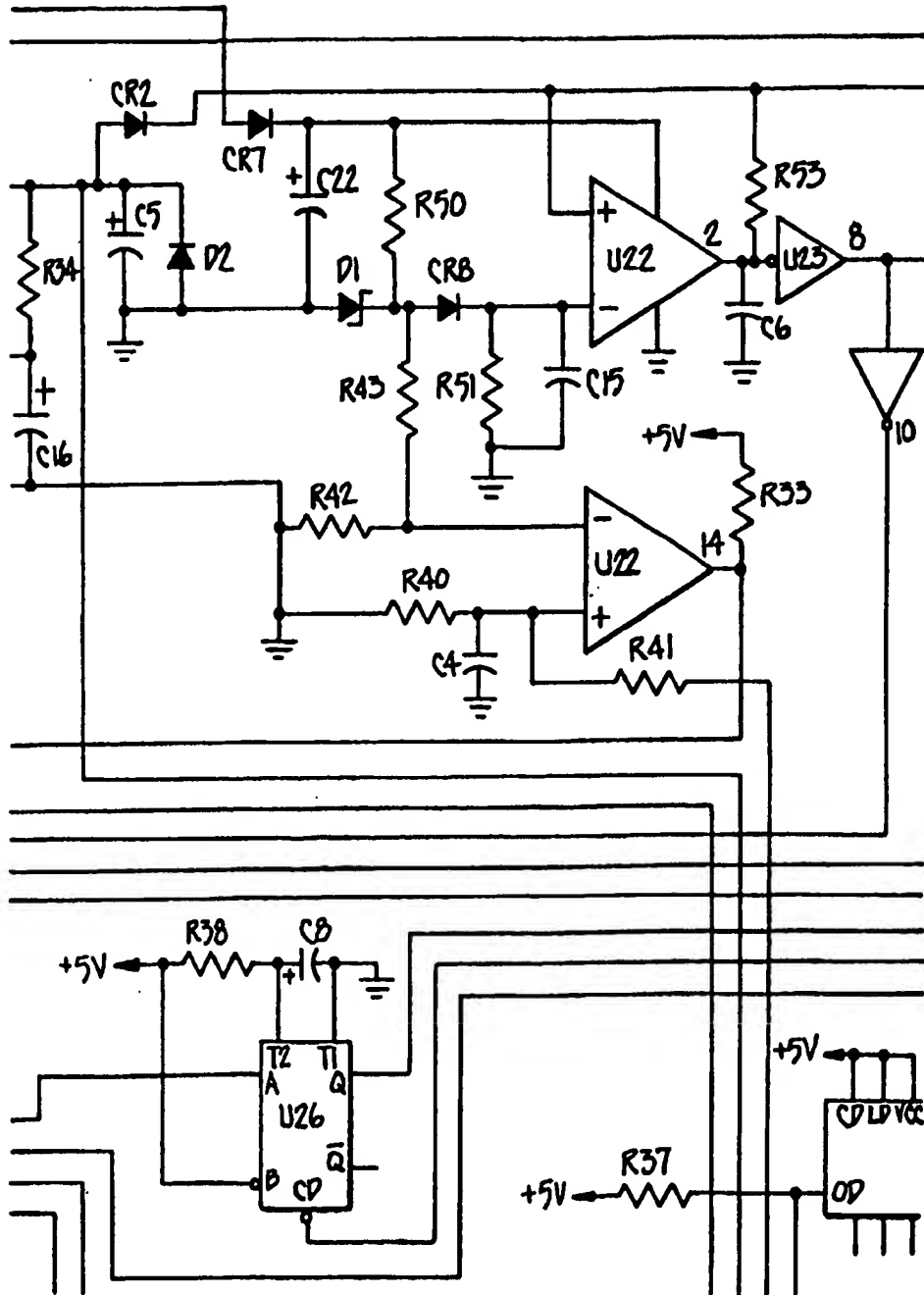
FIG. 3.

FIG. 3A.



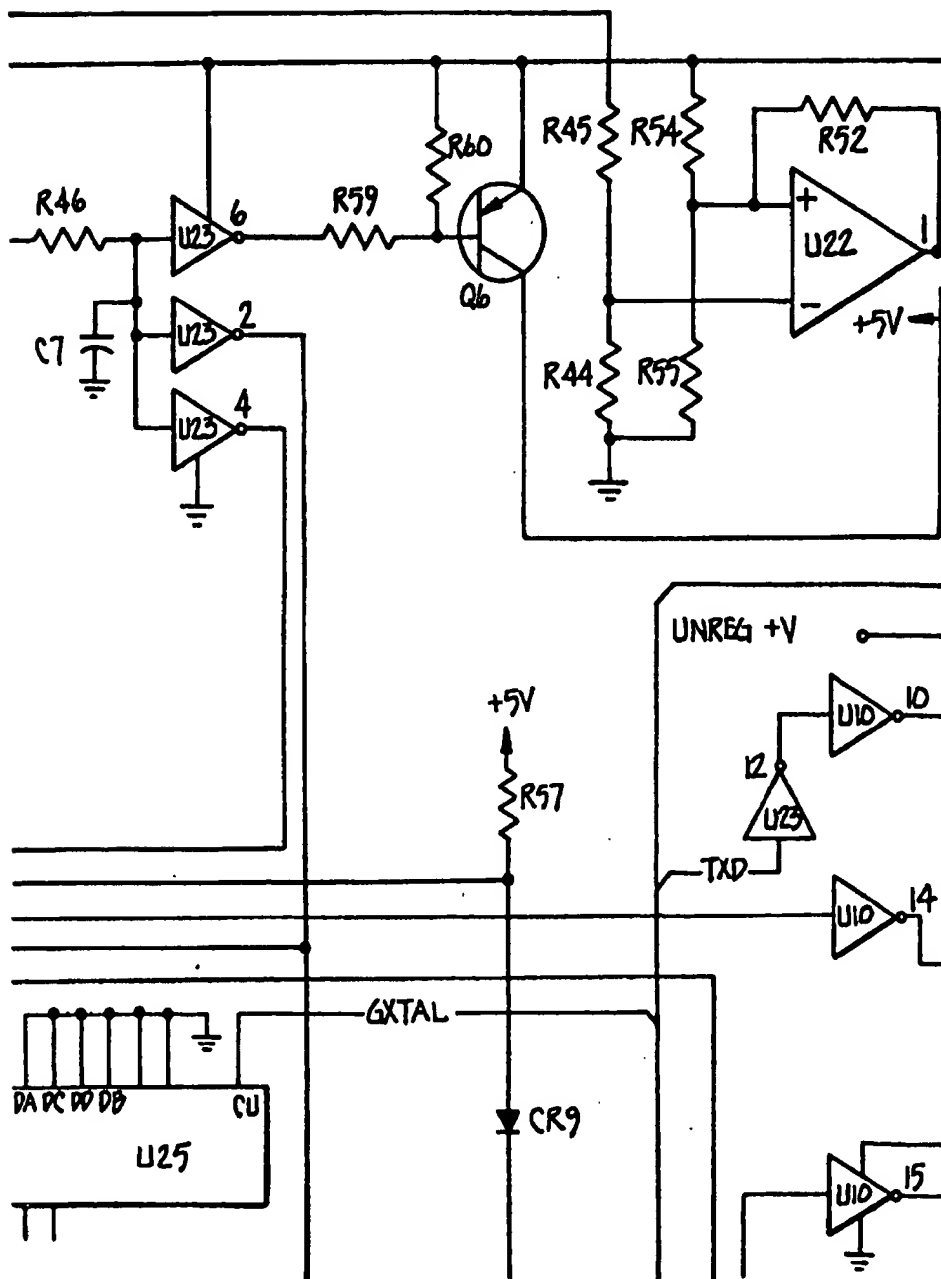
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FIG. 3B.



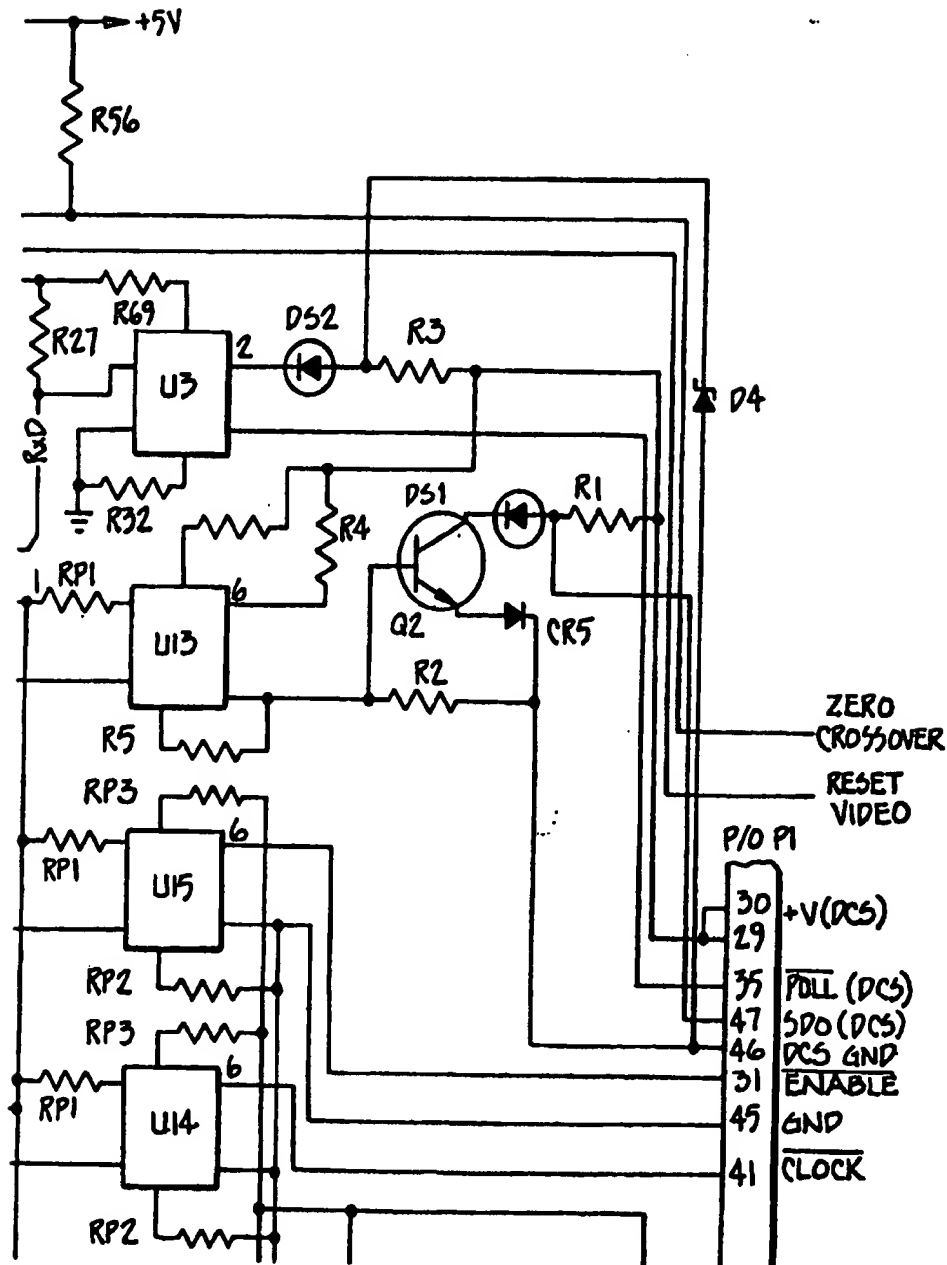
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FIG. 3C.



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FIG. 3D.



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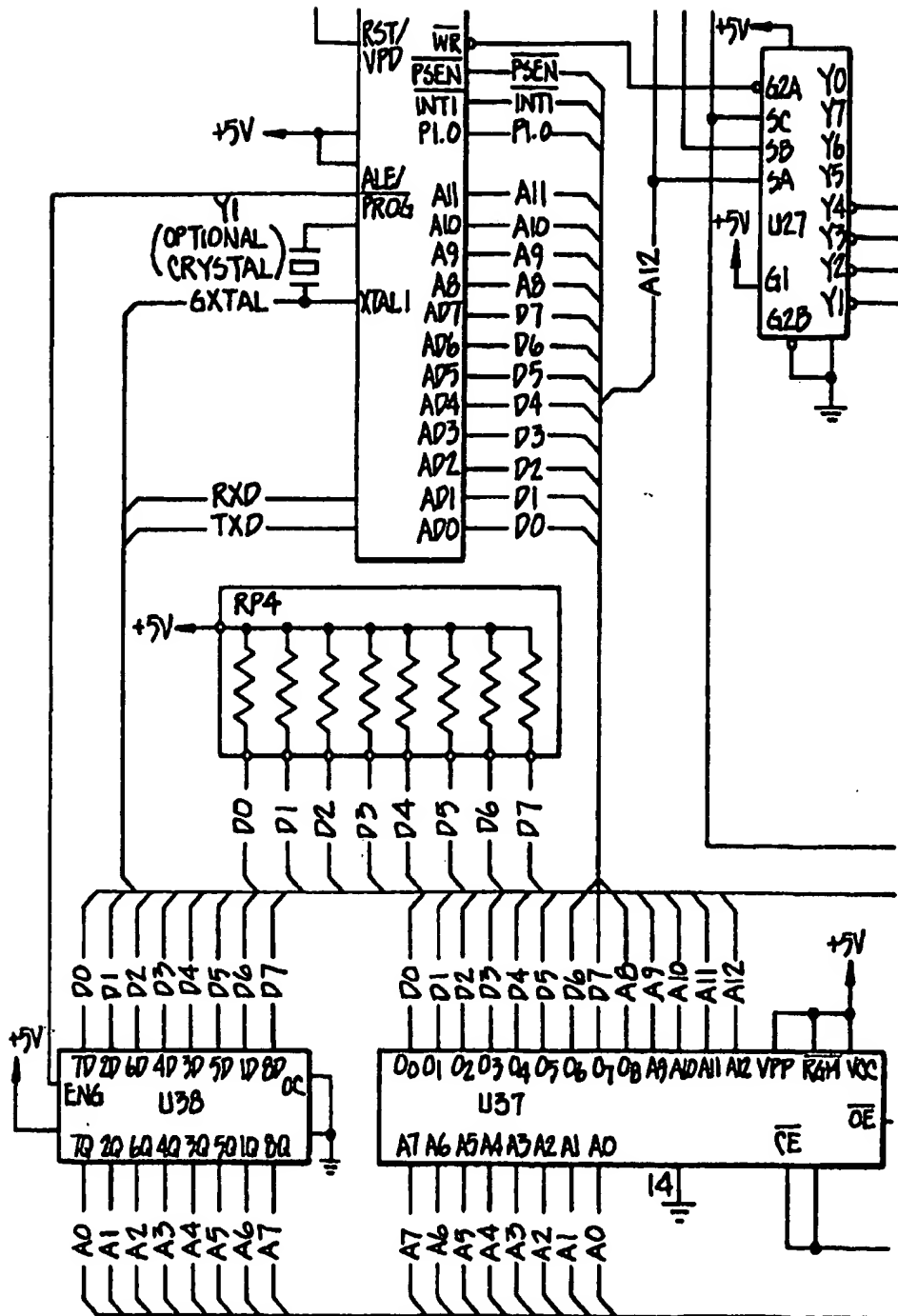


FIG. 3E.

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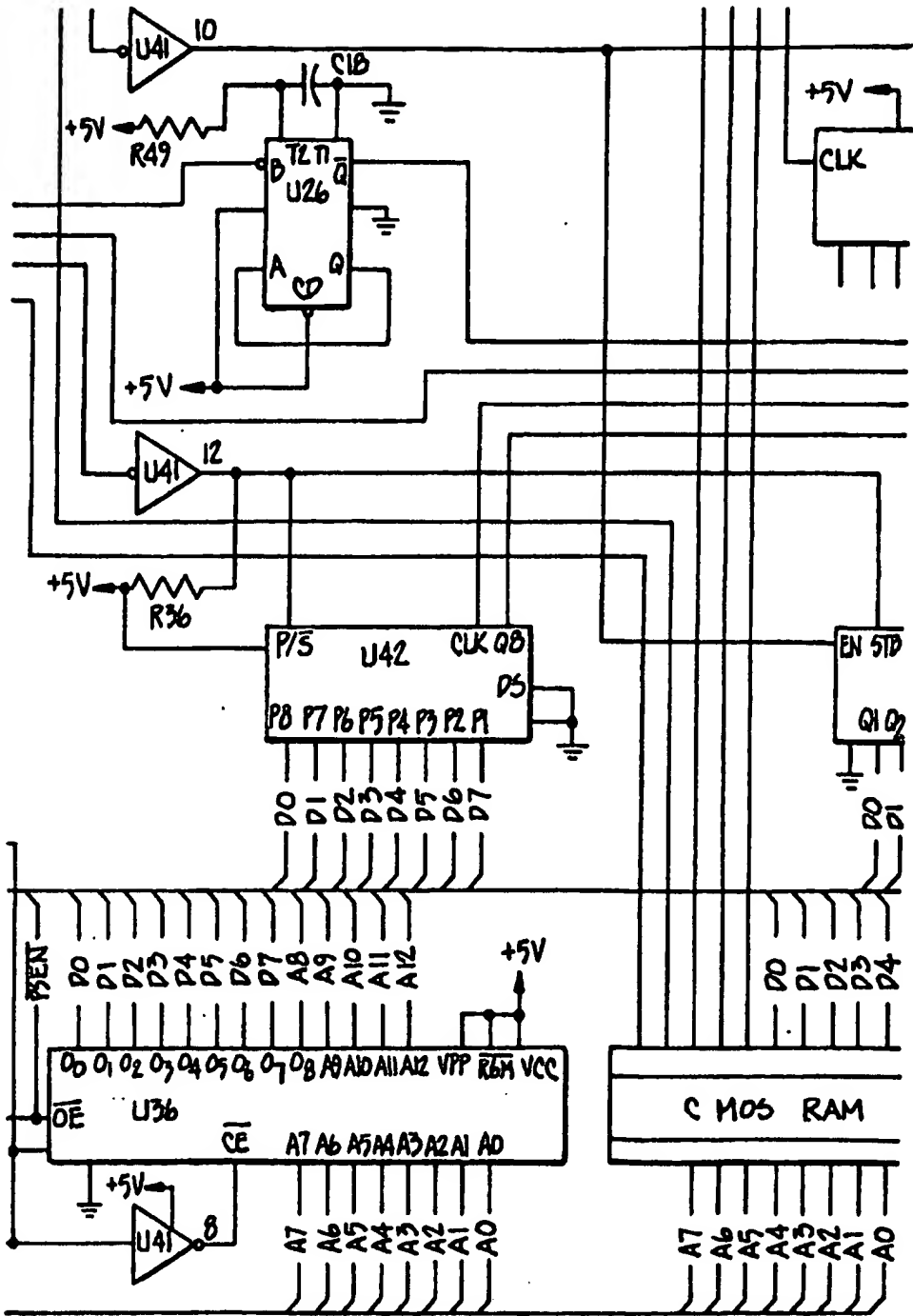


FIG. 3F.

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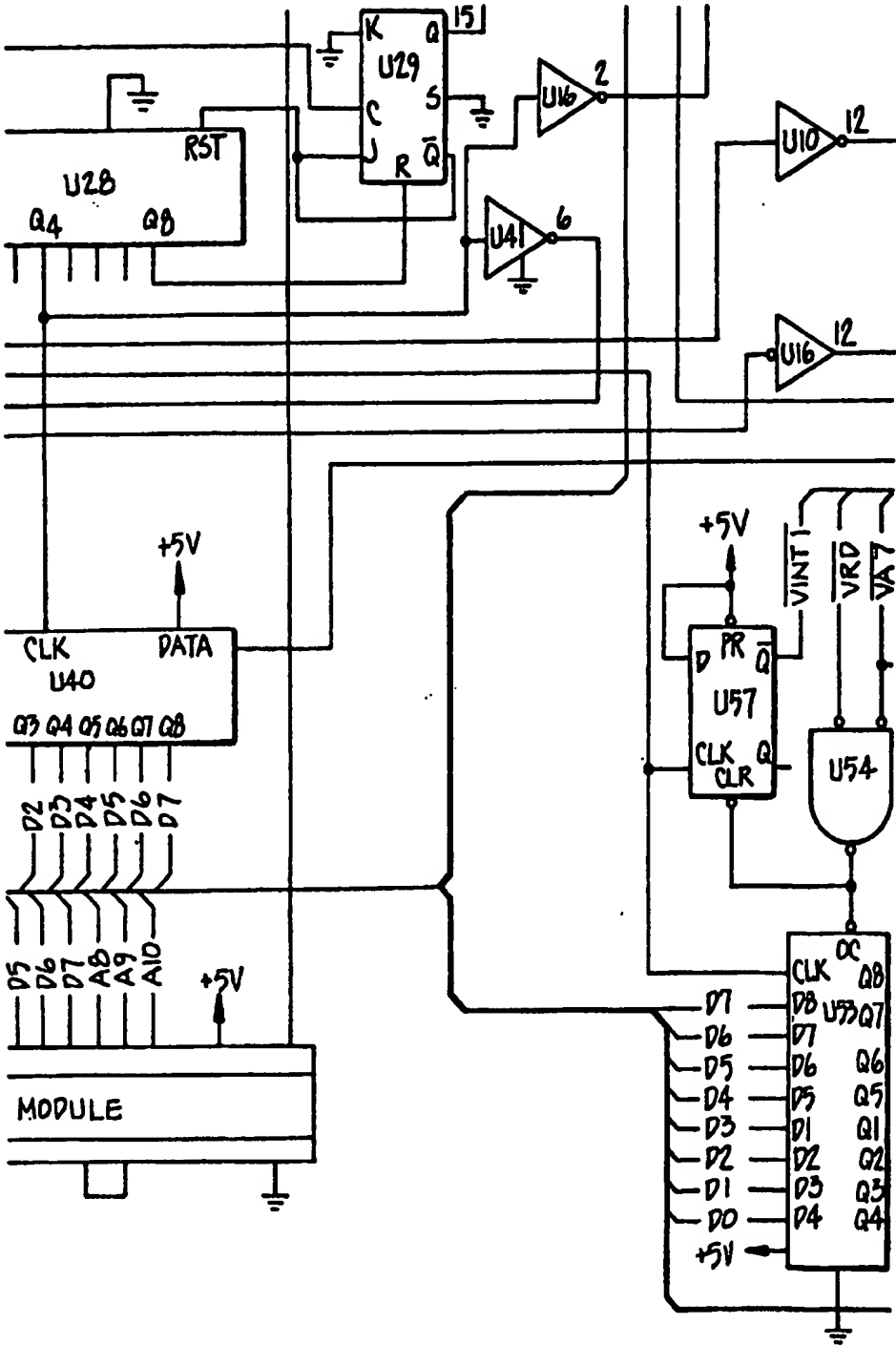


FIG. 36.

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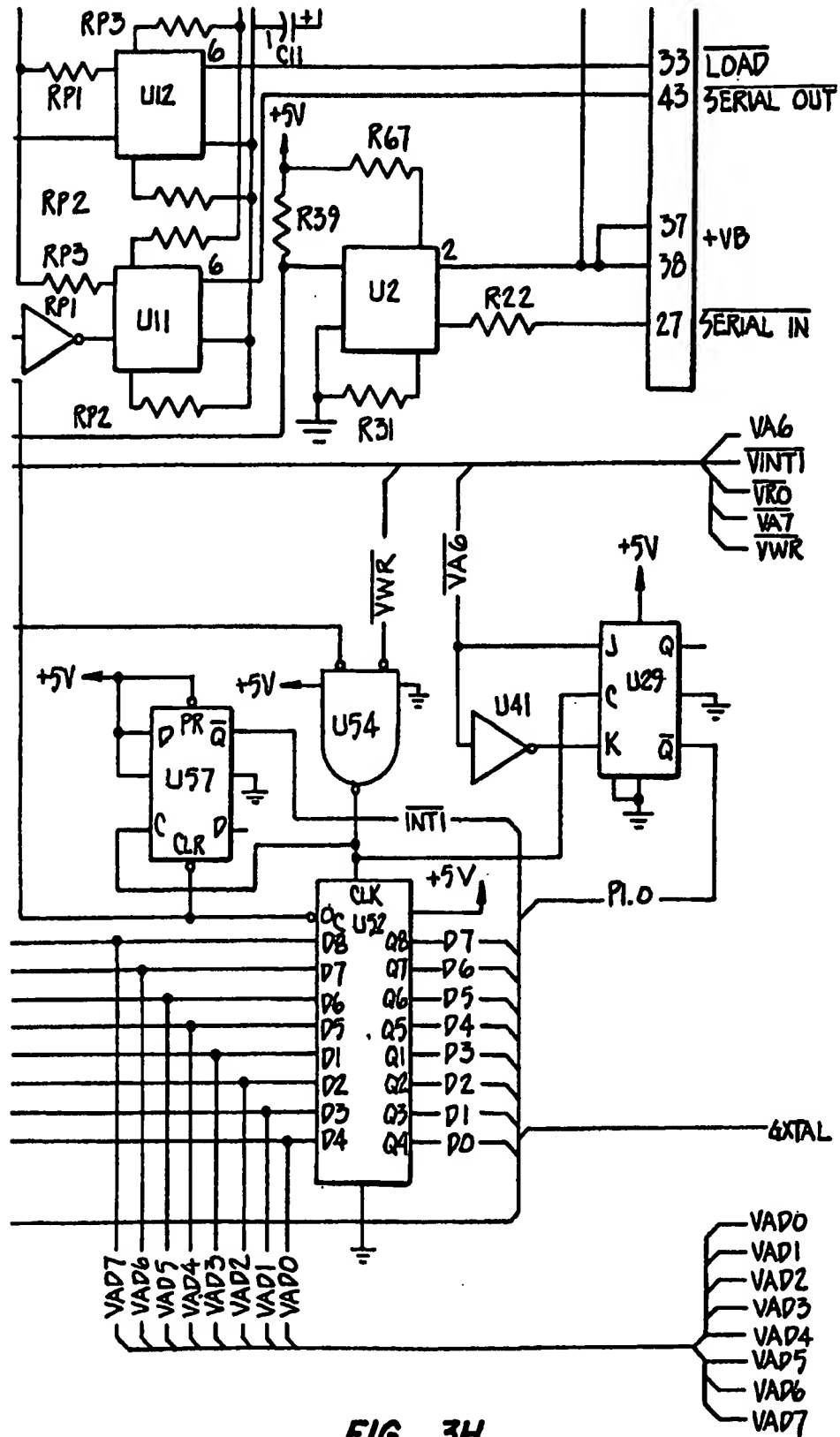


FIG. 3H.

FIG. 4A.	FIG. 4B.
FIG. 4C.	FIG. 4D.
FIG. 4E.	FIG. 4F.

FIG. 4.

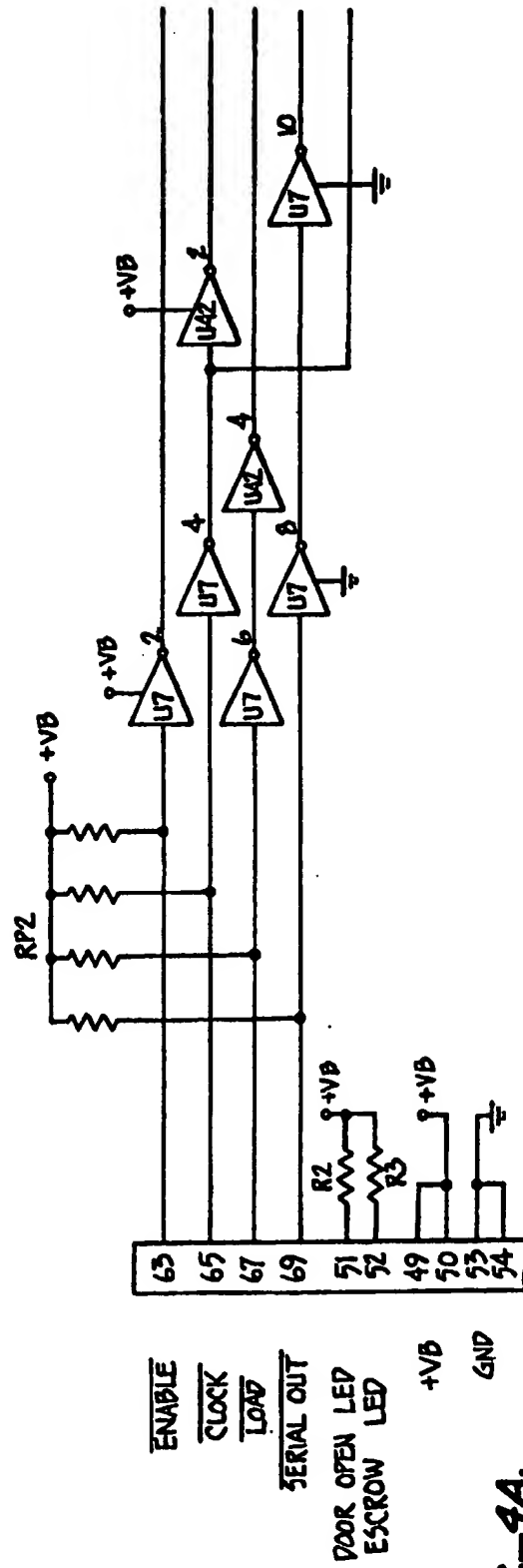


FIG. 4A.

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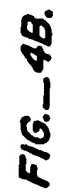


FIG.-4B.

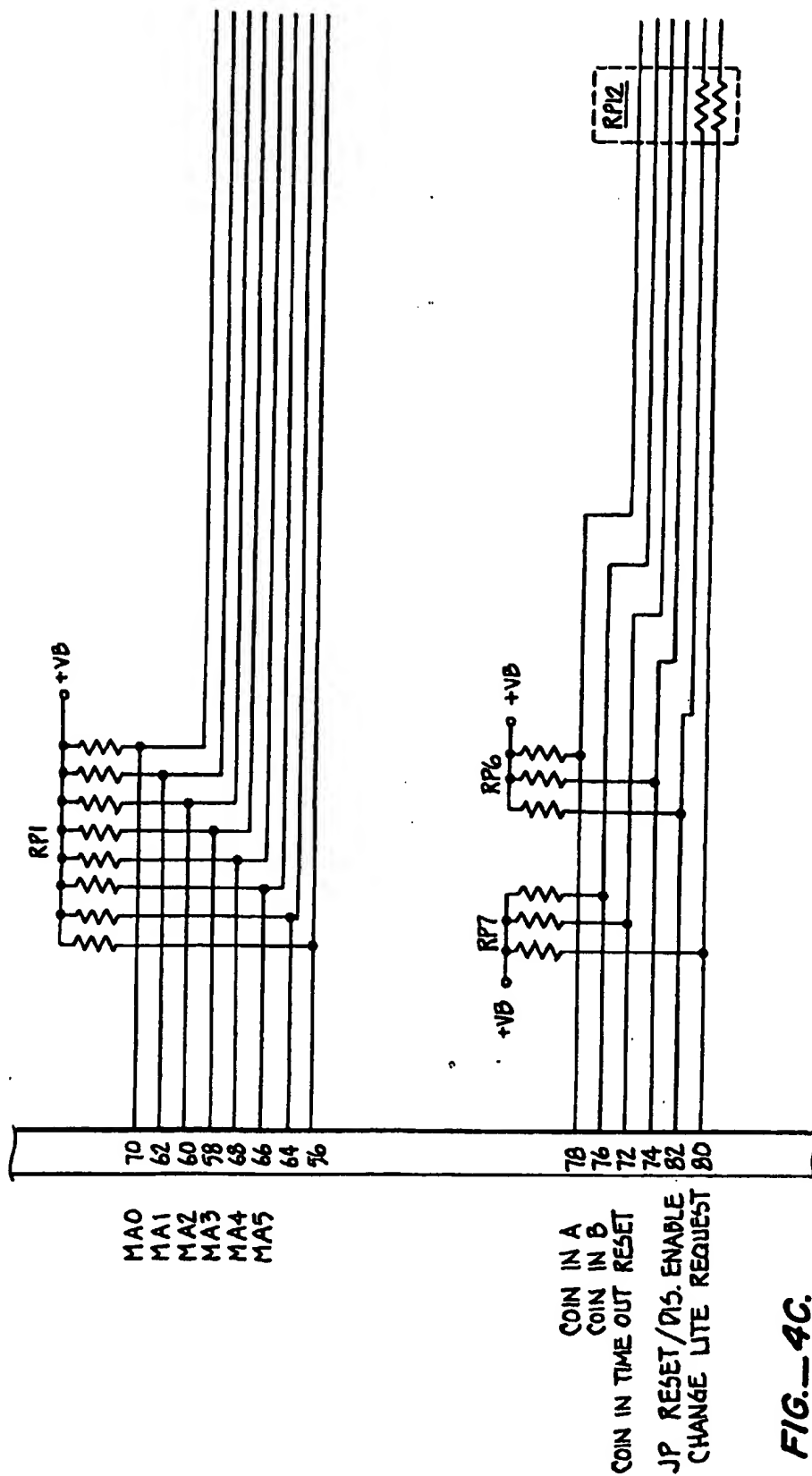


FIG.-4C.

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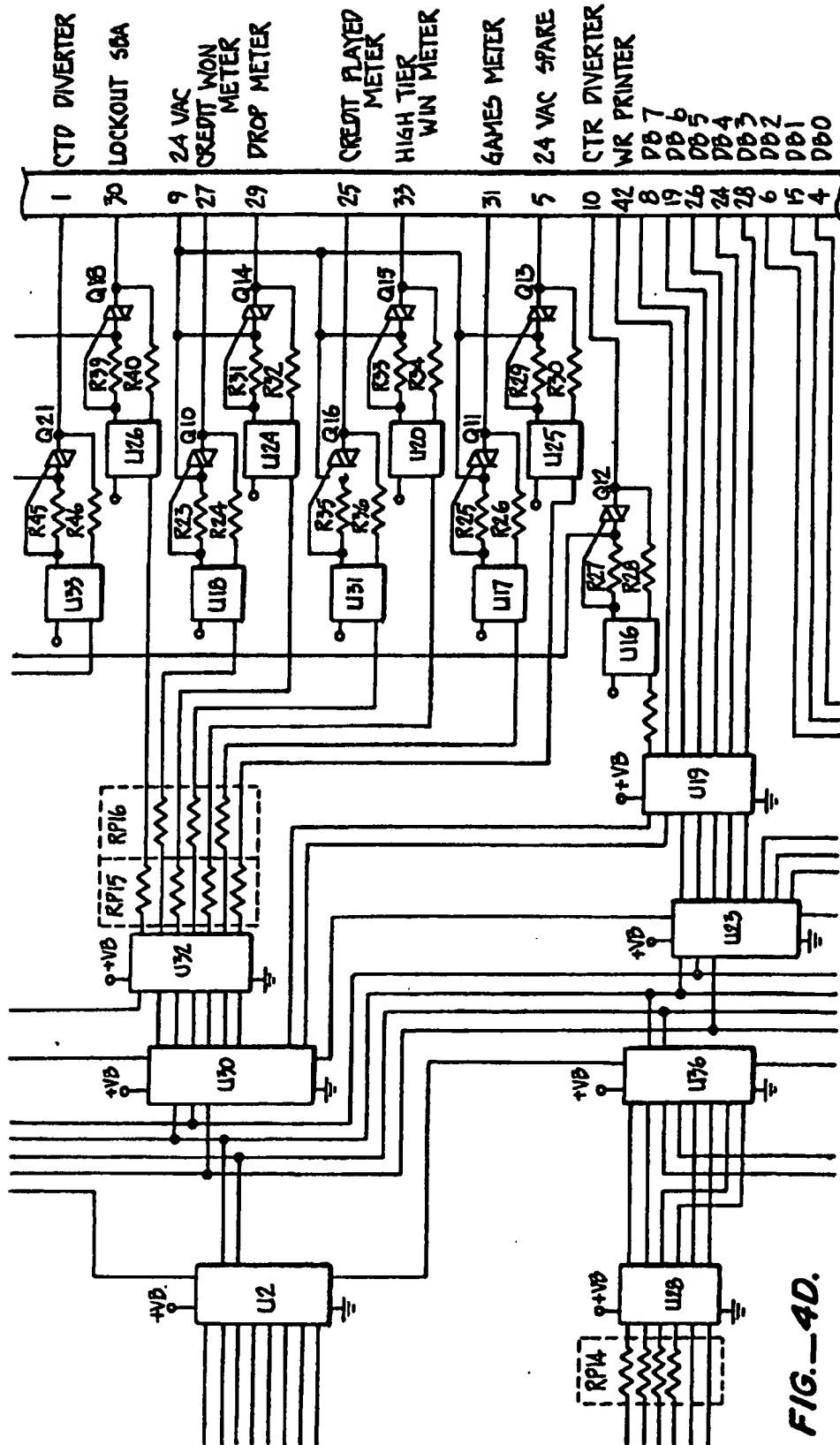
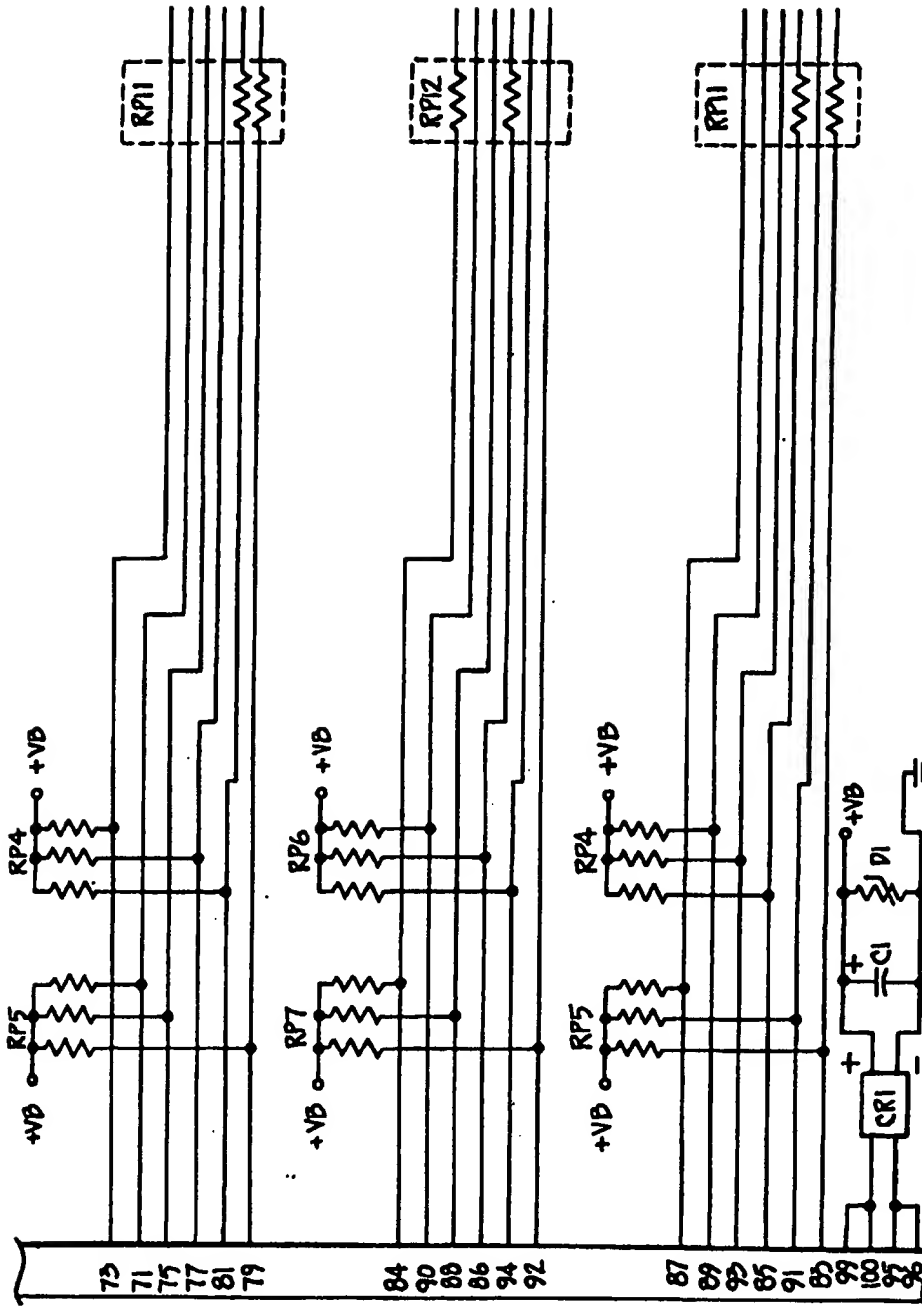


FIG. 4D.

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COIN REJECT SENSE
SELF TEST
COIN RETURN
PLAY CREDIT
CASH OUT

COIN IN C
DOOR OPEN/RECEIVE
PAPER LOW
PRINTER BUSY
PRINTER ERROR

NEUTRAL SW
LPEN
COIN IN D
COIN IN E
COIN IN F
START SW

8VAC
FIG. 4E.

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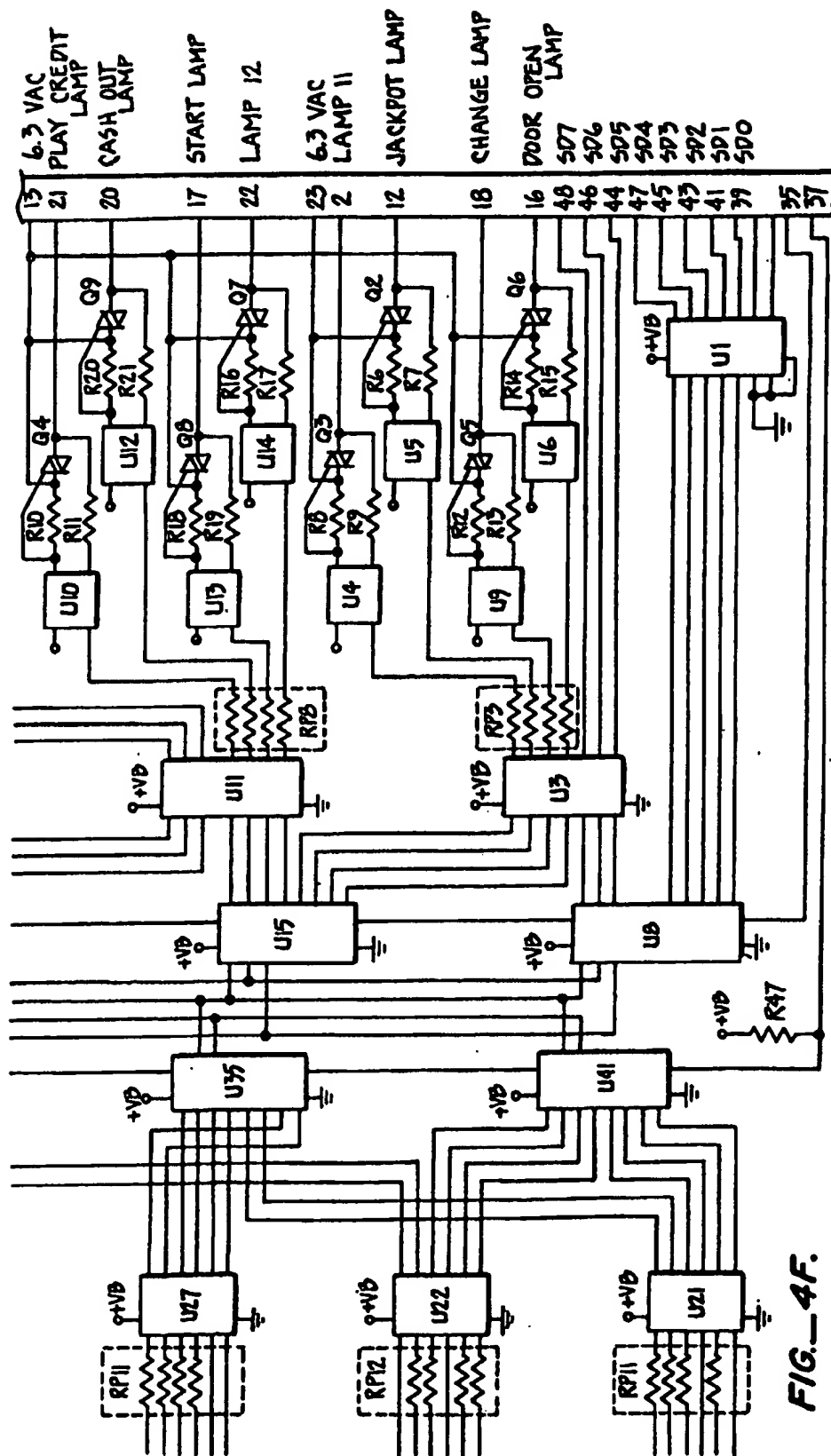
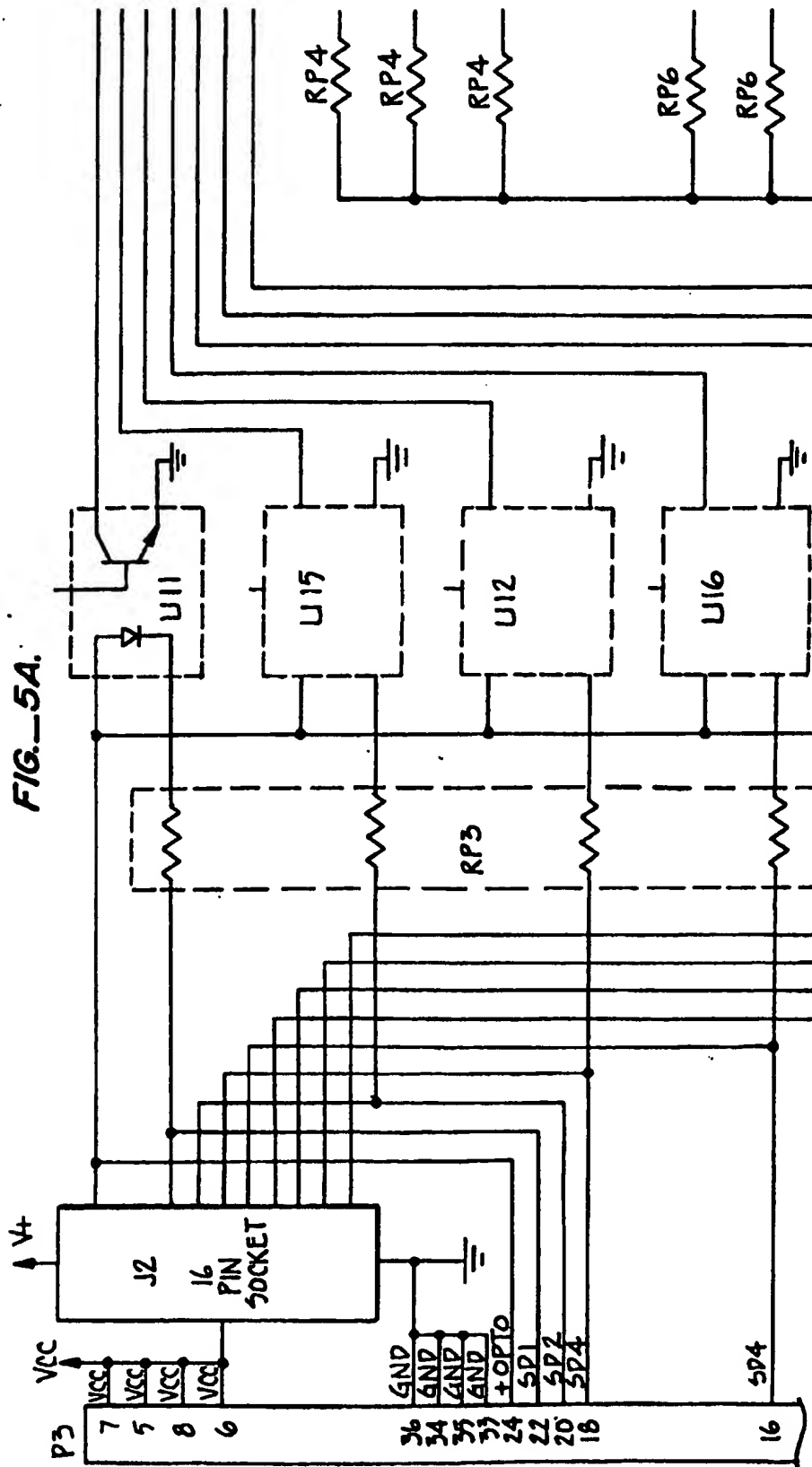


FIG. 4F.

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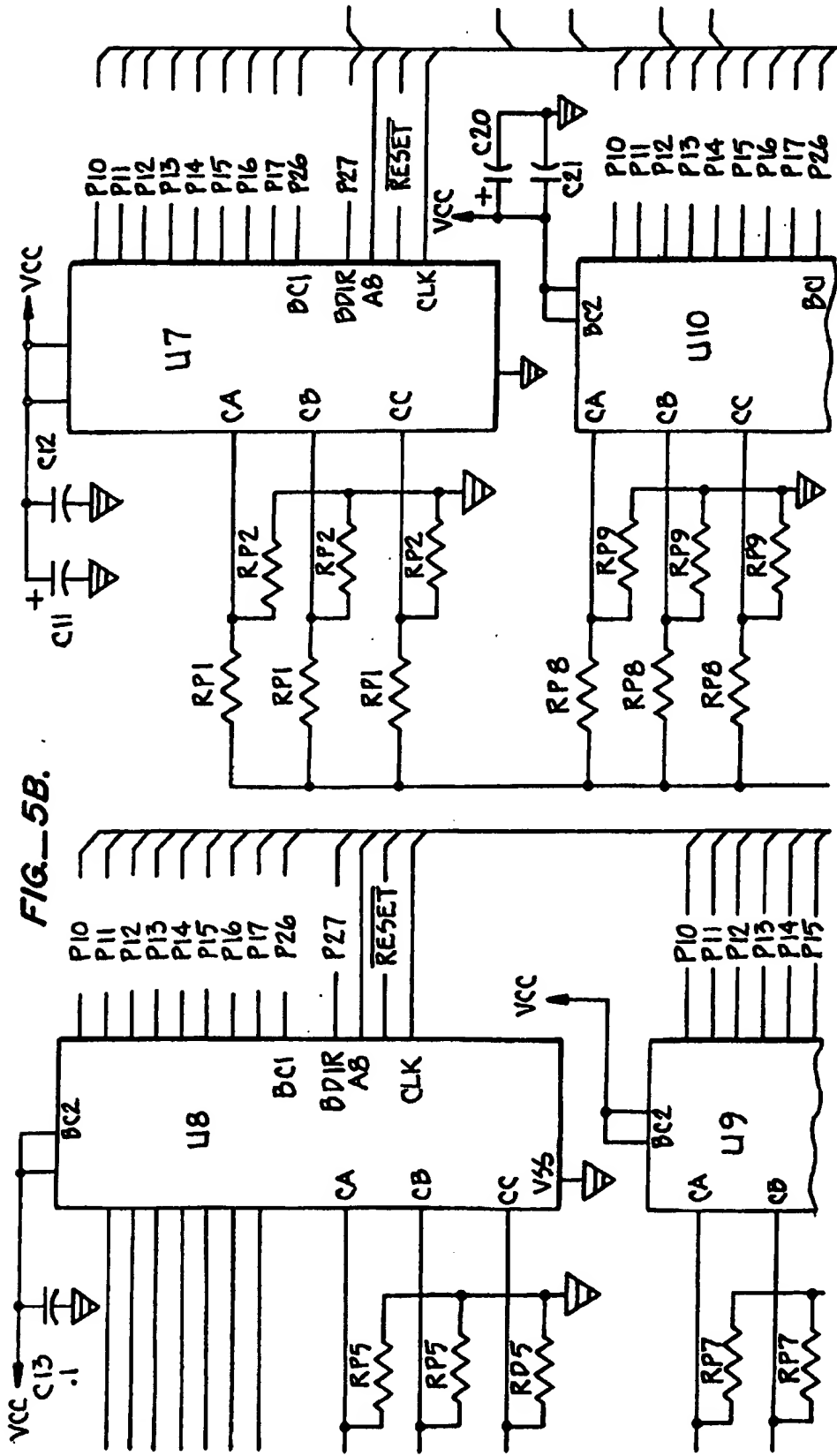


FIG. 5B.

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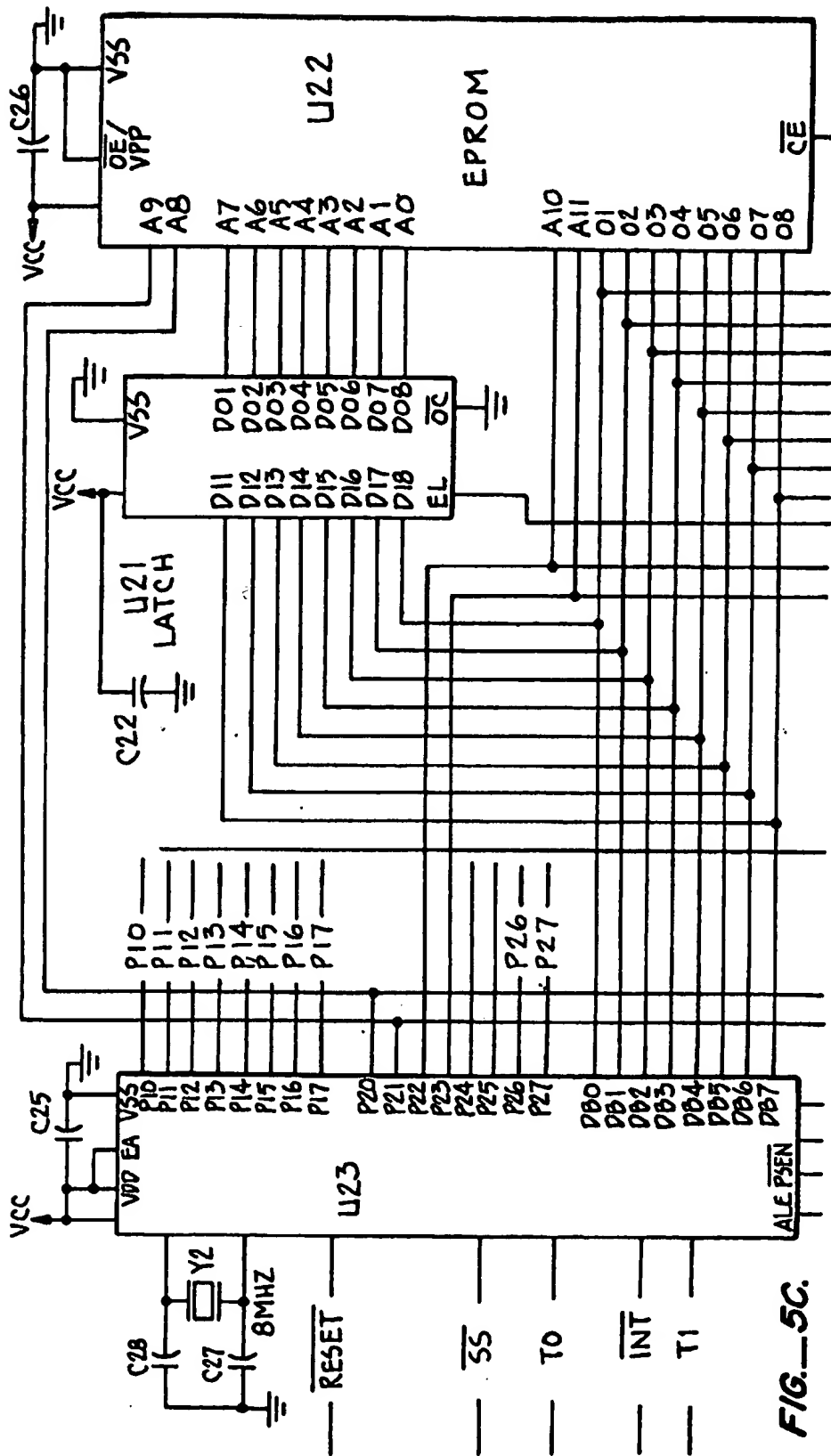
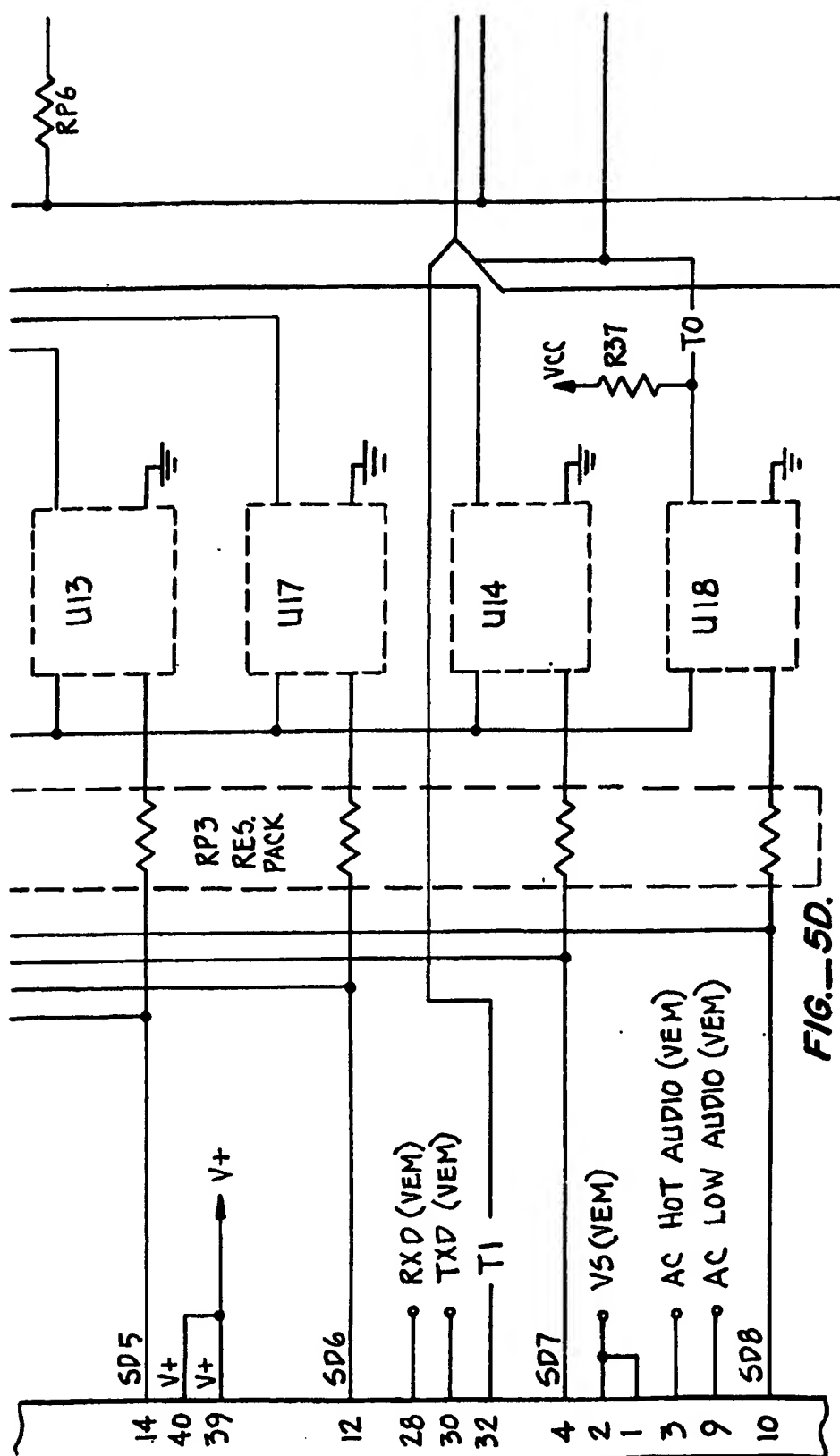
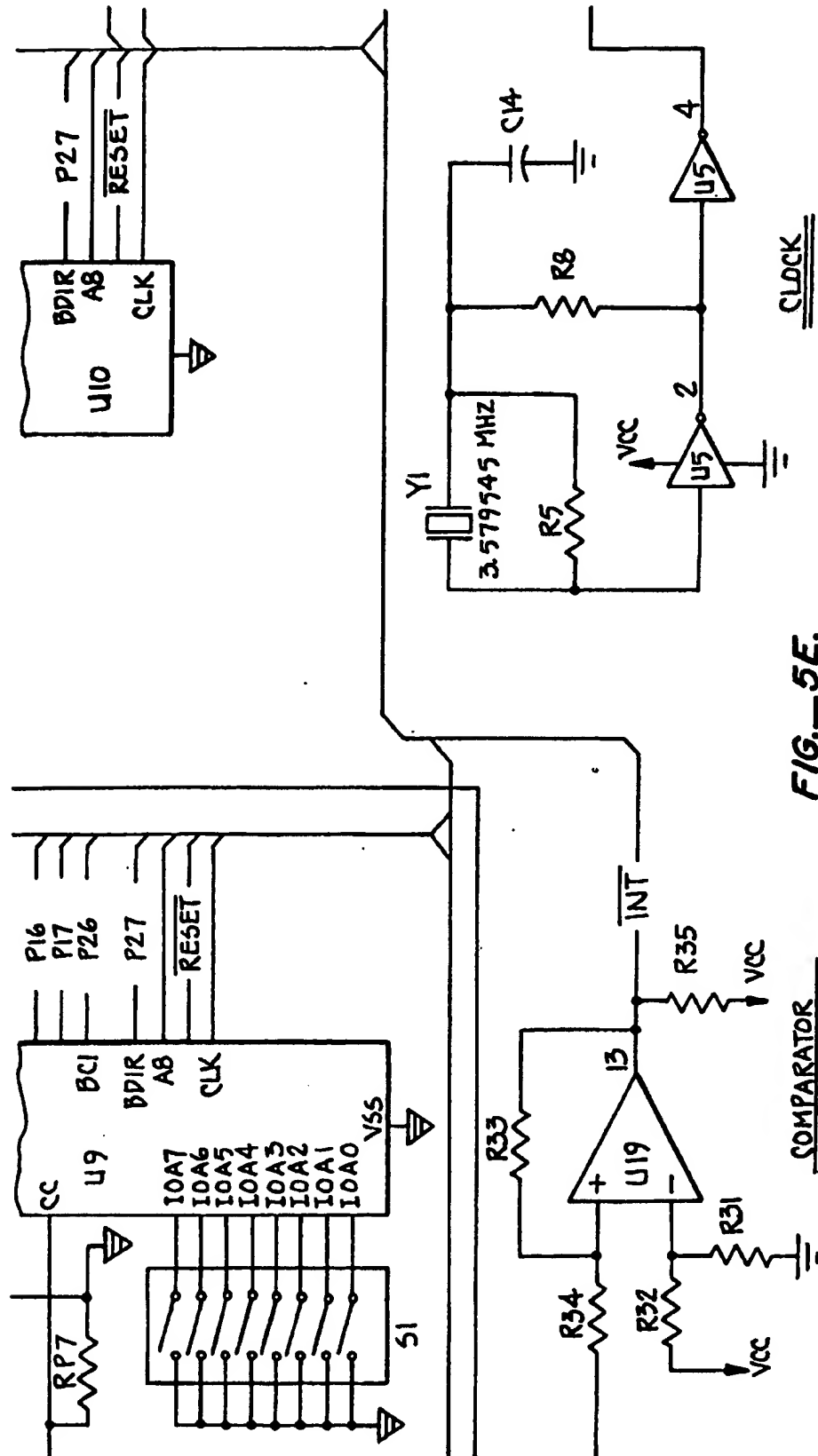


FIG. 5C.

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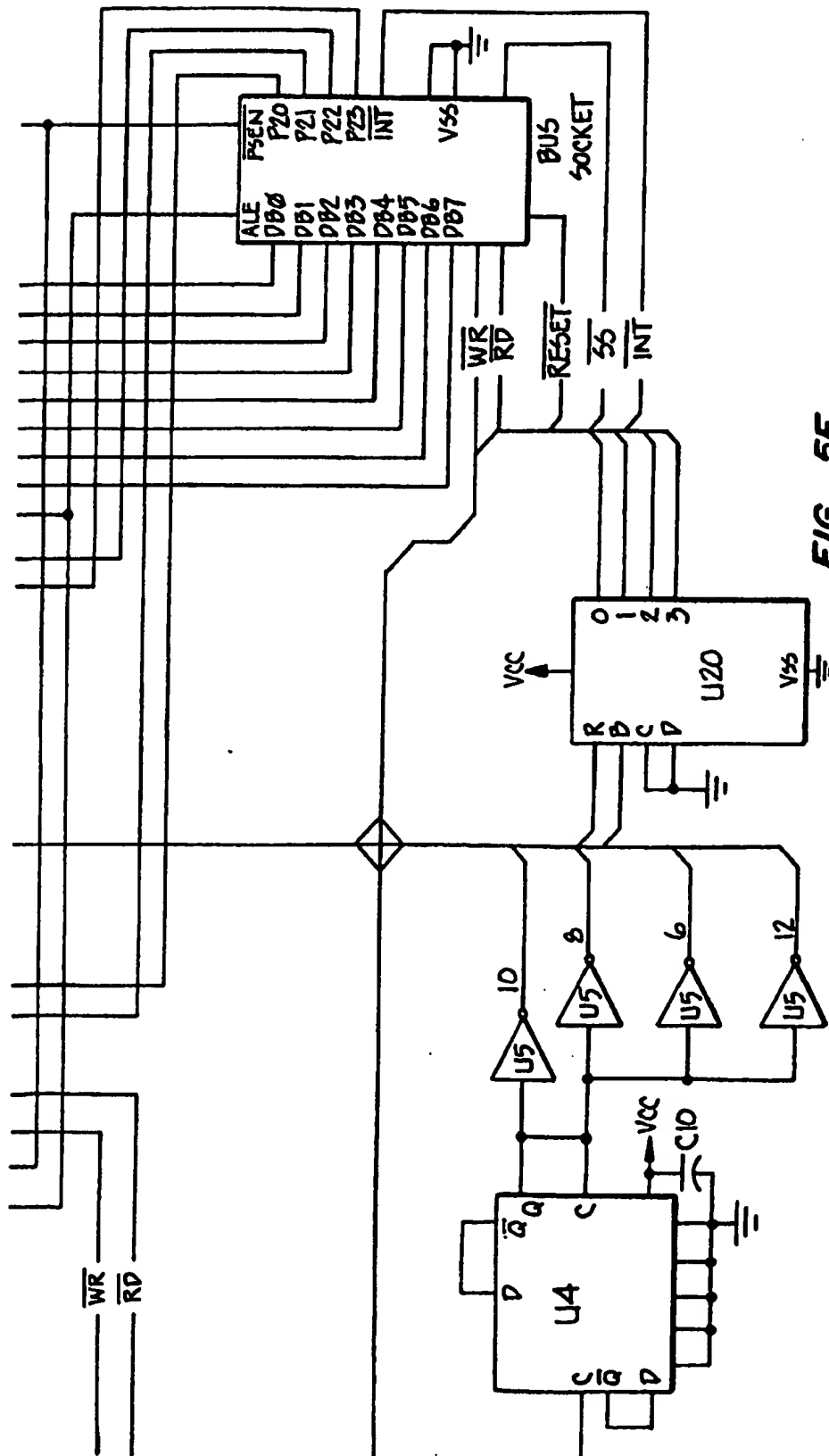


FIG. 5F.

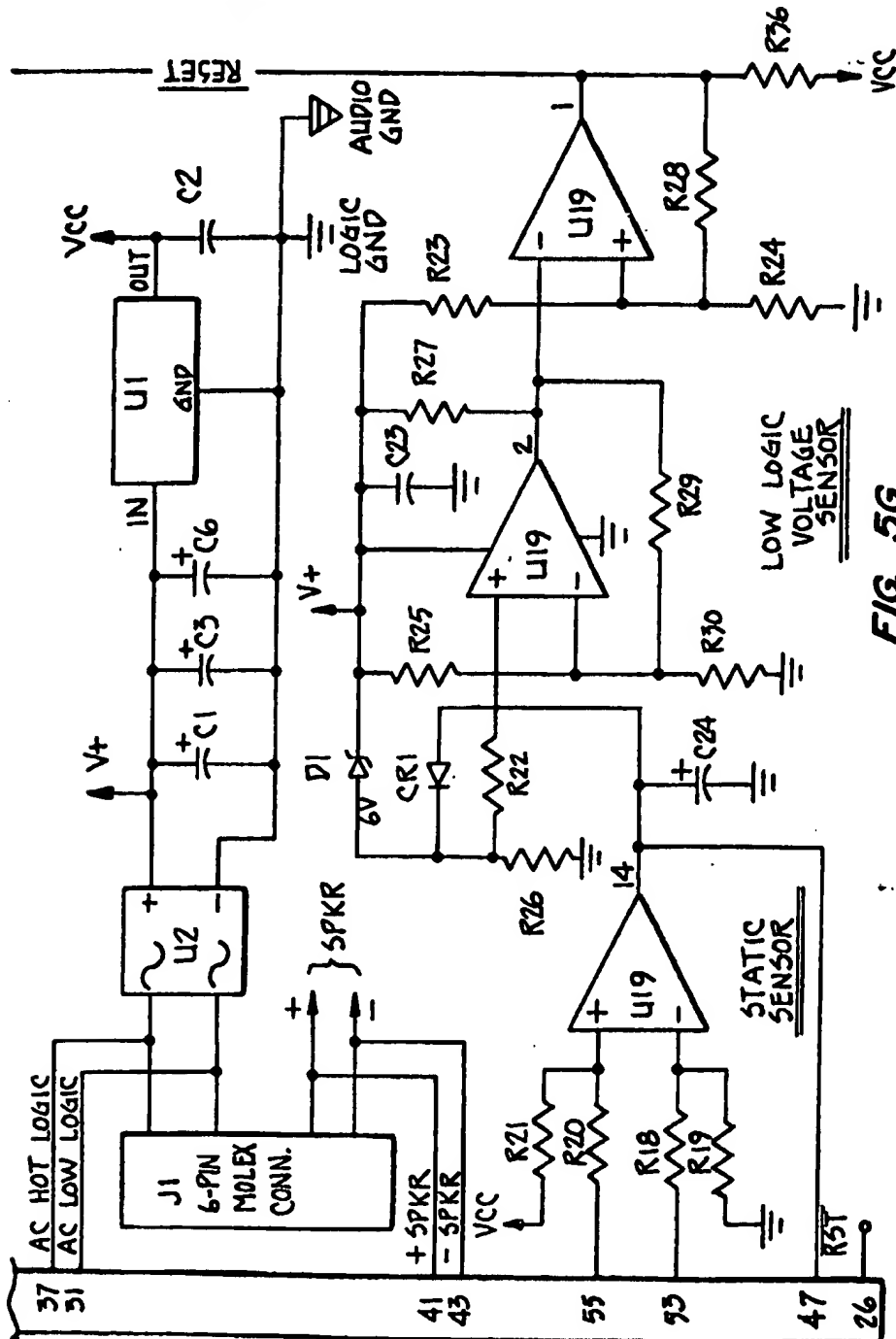


FIG 5A	FIG. 5B	FIG. 5C
FIG 5D	FIG. 5E	FIG. 5F
FIG. 5G	FIG. 5H	

FIG.-5.

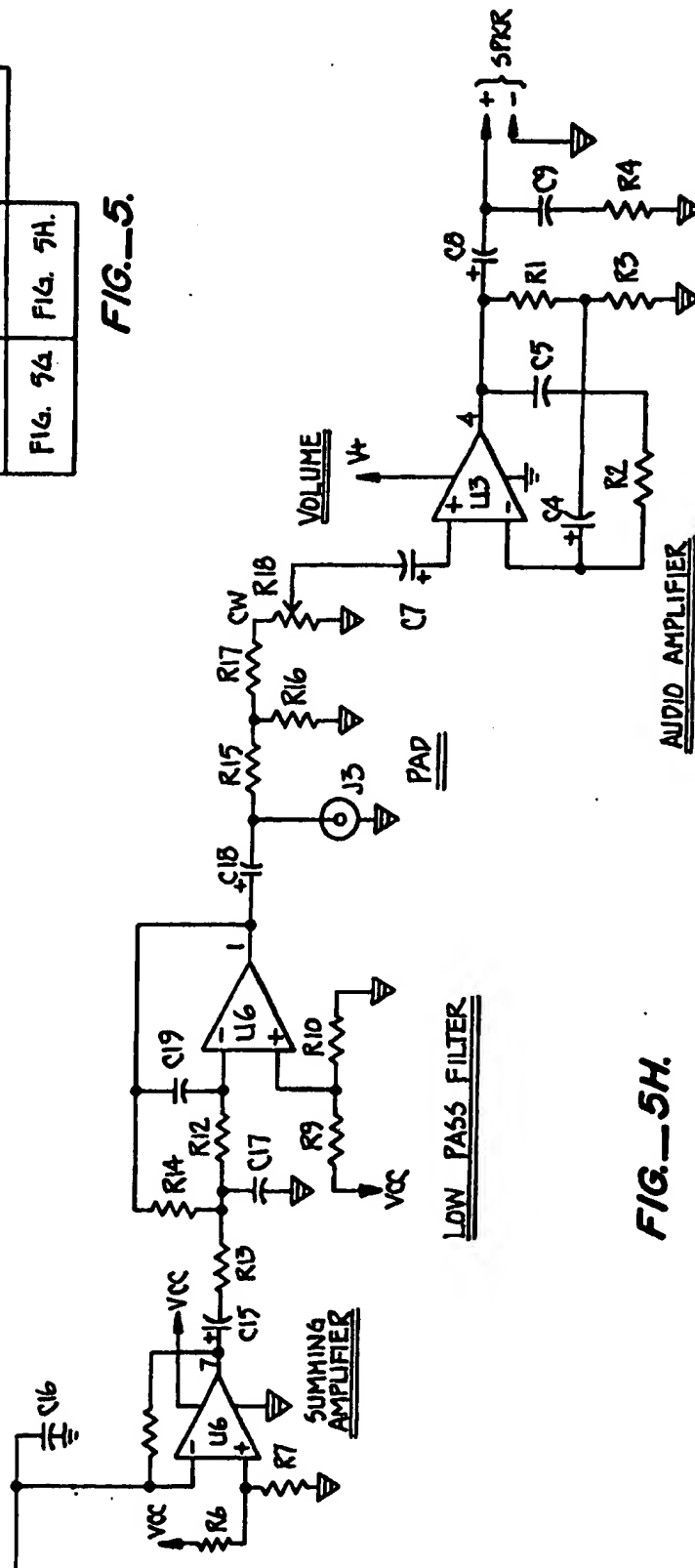


FIG.-5H.

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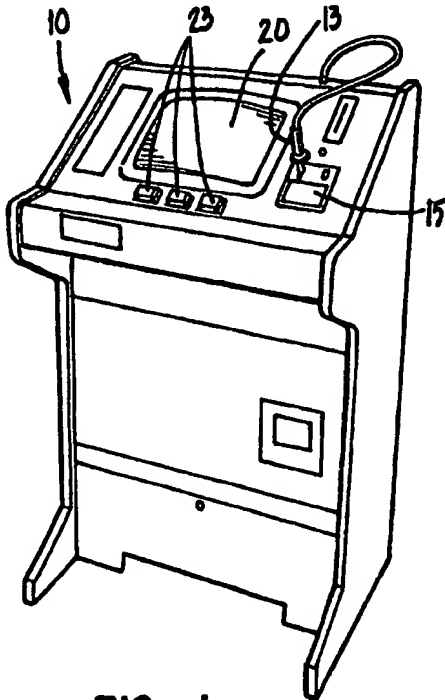


FIG. 1.

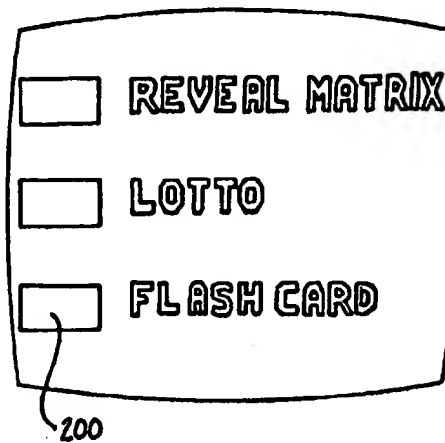


FIG. 6.

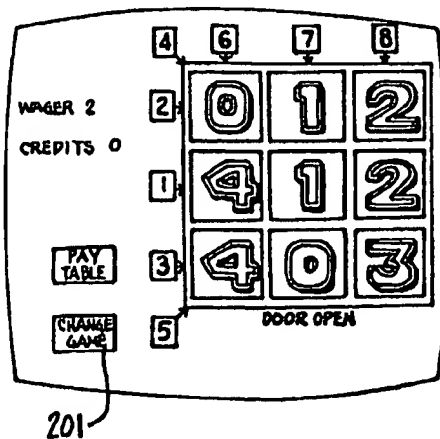


FIG. 7A.

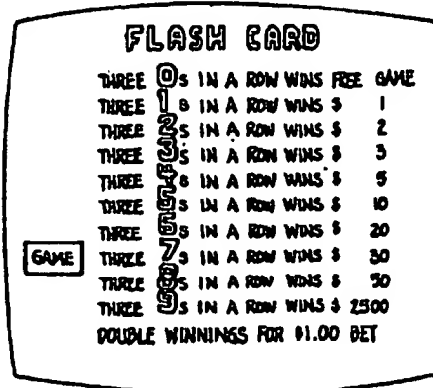


FIG. 7B.

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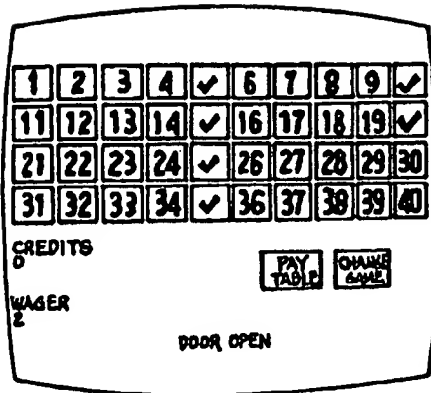


FIG. 8A.

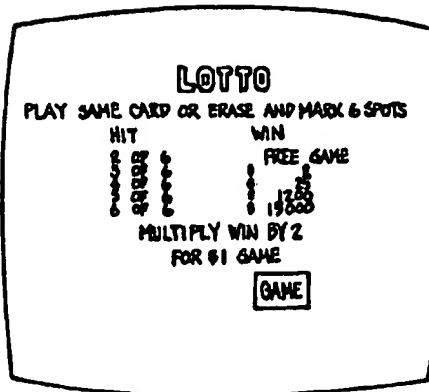


FIG. 8B.

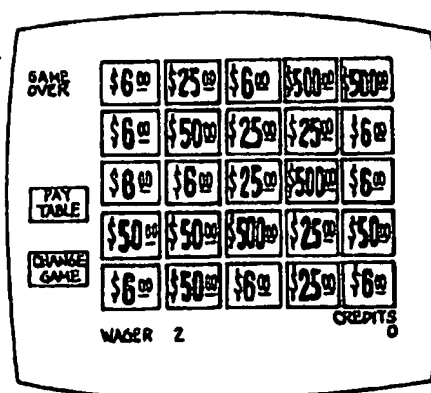


FIG. 9A.

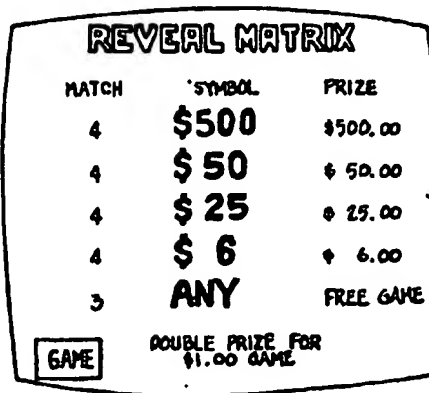


FIG. 9B.

SPECIFICATION

Lottery game terminal

5 The present invention relates to electronic gaming devices. More particularly, the present invention relates to an electronic lottery game terminal for use in a lottery system, such as a state-supported lottery. 5

2. Description of the prior art

State run lotteries are well known and popular revenue raising enterprises. Such lotteries are benign forms of taxation that allow a lottery ticket purchaser to buy a chance to win a large cash prize. In exchange for this 10 legalized gambling, the state makes a favorable profit running the lottery. 10

Most lotteries involve the sale of a ticket that may be either an instant winner or scratch-off type ticket, wherein the purchaser reveals an obscured number pattern in a matrix to determine on the spot if he is a winner; or a large jackpot type ticket, wherein the purchaser awaits selection and posting of winning ticket 15 numbers, usually after an announced "drawing". 15

In all such state run lotteries, the purchase of a ticket is a vendor/vendee type transaction. That is, a purchaser goes to a ticket agent, purchases a ticket, and either scratches off a ticket coating which obscures the value of the ticket, or awaits the posting of a list of winning ticket numbers. In all such cases, there is no real game play involved in "playing" the lottery. Additionally, gameplay accounting and security are poorly 20 supervised. As a result, it is not uncommon for ticket agents and game players to conspire to cheat the lottery. Nor is it unusual for forged lottery tickets to be presented to collect a prize. 20

Summary of the invention

The present invention provides a lottery game terminal either for use as a stand-alone unit or for use in a statewide lottery network. The lottery game terminal provides a game player with a choice of several lottery 25 type games. Game selection is made by light pen selection of any one of several soft switches provided on a game terminal display main menu. Soft switches enable the player to select between a game display and an associated game pay schedule. Game play is also directed by a series of light pen operated soft display switches. 25

30 The lottery game terminal consists of the following modular components: a microprocessor; input/output circuitry; a tone generator; a printer and printer interface; and a color monitor. The microprocessor is the central control for the entire lottery game terminal. The microprocessor is a dual CPU circuit including a game processor for overseeing game, accounting, and input/output functions; and a video processor, for controlling game display functions. 30

35 Serial communication between the microprocessor and game components such as switches, sensors, detectors, and meters, is a function of serial communications via the input/output circuit. Thus, the tone generator, and printer and printer interface are coupled to the microprocessor via the input/output circuitry. 35

A separate serial link is provided directly to the microprocessor for coupling the lottery game terminal in parallel with other lottery game terminals in a lottery game system. In such arrangement, circuitry within the 40 lottery game terminal allows it to be uniquely identified. 40

A light pen interface and color monitor operating circuitry are included as part of the video processor portion of the microprocessor. Video processor display images are formed from a plurality of image element character blocks stored in addressable character memory and displayed in a series of movable display planes.

45 It is a novel feature of the present invention that a lottery game terminal is provided for inclusion in a statewide lottery system. The lottery game terminal provides the game player with a plurality of selectable games designed to maintain player interest and to appeal to a broad player base. Novel circuit architecture provides high resolution color graphics and realistic sound effects to accompany game play and thus enhance the player's enjoyment. Lottery game terminal communications within a lottery system are 50 encrypted to provide a high measure of security. Additionally, high-tier wins may require remote validation to ensure payment of valid wins only, and thus discourage cheating of the lottery game system. 50

Other security measures include a full complement of solid state and mechanical meters for storing game play statistical information and a complete battery backup system for maintaining game memory data intact. To this end, the game terminal architecture is that of a state machine wherein game play and operation is a 55 function of a number of defined game states. Thus, game interruption - e.g. due to power failure - does not effect game play because previous game states are remembered and game play may continue at said states when game play is restored after the interruption is corrected. 55

Brief description of the drawings

60 Figure 1 is a perspective view showing a lottery game terminal according to the present invention; 60
Figure 2 is a block diagram of the lottery game terminal circuit;
Figure 3 is a schematic diagram of the lottery game terminal microprocessor circuit;
Figure 4 is a schematic diagram of the lottery game terminal interface circuit;
Figure 5 is a schematic diagram of the lottery game terminal tone generator circuit;
65 Figure 6 is an illustration of the lottery game terminal display showing a series of user selected lottery 65

games;

Figure 7A is an illustration of the lottery game terminal display showing a flash card type game;

Figure 7B is an illustration of the lottery game terminal display showing the flash card type game pay schedule;

5 Figure 8A is an illustration of the lottery game terminal display showing a lotto type game;

5

Figure 8B is an illustration of the lottery game terminal display showing the lotto type game pay schedule;

Figure 9A is an illustration of the lottery game terminal display showing a reveal matrix type game; and

Figure 9B is an illustration of the lottery game terminal display showing the reveal matrix type game pay schedule.

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Detailed description of a preferred embodiment

A preferred embodiment of a lottery game terminal 10 is shown in perspective view in Figure 1. Terminal 10 includes a light pen 13, a color video monitor 20, and a series of input switches 23, by which various game terminal operations are performed. Although a color monitor is disclosed herein, other types of displays may

15

15

be provided in its place, such as black and white monitors, plasma panels, and liquid crystal displays. Terminal 10 also includes a coin slot 15. A player initiates game operation by inserting various denominations of coins into slot 15. The denomination inserted depends on the type of operation desired for the particular game being played.

Figure 2 is a block diagram of a preferred lottery game terminal circuit. The game terminal circuit includes

20

five basic modules:

1) a microprocessor module 12;

2) an input/output module 14;

3) a tone generator module 16;

25 4) a printer interface module 18; and

25

5) a color monitor 20.

Microprocessor module 12 is the central control for the entire lottery game terminal. The microprocessor module is of a dual CPU architecture and is accordingly under control of a game processor 34 and a video

30

30

processor 37. Each of the two processors manages a separate game terminal function, thereby providing improved system performance and integrity.

Game processor 34 produces the signals necessary to communicate with all external modules except color monitor 20. The external modules control such items as input switches 23; various sensor inputs, such as a "door open" detector 22; meters 27; various game operation solenoids (not shown); game lamps 26; tone

35

35

generator module 16 including its associated speaker 17; printer interface 18, including its associated printer 19 and paper cut mechanism 21; and serial communications channels to a lottery agent terminal 11. Game microprocessor 34 also controls game execution. Accordingly, game processor 34 supervises all decoding, command instructions, and data flow in the lottery game terminal circuit.

Game processor 34 includes a serial link to the lottery agent terminal, as described above. The present

40

40

lottery game terminal is intended for use either as a stand-alone game or in a lottery gaming system. The preferred embodiment of the invention provides a plurality of lottery game terminals coupled in parallel on a serial bus and in communication with a lottery agent terminal. Each terminal in such a lottery gaming system is uniquely identified by a hardware and/or software ID tag, discussed below.

45

45

A video lottery system with which a preferred embodiment of the present invention may be used is the subject of pending patent application 8423031 (Agents Ref 15071A) entitled "Video Lottery System". The lottery system disclosed therein was invented by the inventors herein and is assigned to the assignee of the present invention, IGT Corporation of Reno, Nevada. The above-mentioned pending patent application is not considered essential to an understanding of the present invention, but is included to orient the reader to the type of lottery system with which the present invention can be used.

50

50

I/O module 14 handles the transfer of information between the various input/output devices and microprocessor module 12. I/O module 14 includes an input buffer 28, an input shift register 29, an output shift register 30 and an output drive register 31. Because communication between I/O module 14 and microprocessor module 12 is serial, there is a high degree of I/O flexibility. As a result various types of game play are provided by the present invention.

55

55

The following is an exemplary list of the output devices connected to I/O module output shift register 30 via output drive register 31 that are under control of game processor 34:

1) Printer interface module 18 - transfers ASCII commands in characters; printer 19 may be provided with a unique and controlled paper stock and proprietary printer font as a security measure.

2) Tone generator module 16 - transfers sound commands.

60

60

3) Lockout solenoids (diverters lockout) - controls passage of coins through acceptors (slots) 15.

4) Meters 27 - electrically and mechanically providing number-of-games, credits won, high tier win, credits played, and cash box meter indications.

5) Lamps 26 (indicators) - error lamps (door open and malfunction), switch lamps (depending on games), and optical door-open emitter,

65

65

6) Optical "door open" detector 25 - part of door-open sensor; detects entries into the game terminal

cabinet.

The following is an exemplary list of input devices connected via I/O module input buffer 28 to input shift register 29 that are under control, and that produce actuating input signals for game processor 34:

1) Optical "coin in" detectors 22 - produce a valid coin-in signal after coin falls past optical sensors; can also detect coin travel direction; typically includes antistringing and slugging detectors to provide a high degree of game security. 5

2) Input switches 23 and option switches 24 (depending on game).

3) Printer interface module 18 - transfers status/error characters from printer 19.

I/O module 14 provides a serial interface function to couple terminal input and output signals between microprocessor module 12 and various game I/O modules and devices. The I/O signals are optically coupled to I/O module 14 and from I/O module 14 to microprocessor module 12, to eliminate noise carried by conventional circuit wiring. Reliability and security are therefore hallmark features of the present lottery game terminal. 10

I/O module 14 is coupled to game processor 34 via an I/O control circuit 32, which is a bidirectional serial/parallel shift register. Game processor 34 includes a serial communication port which furnishes a data acquisition system communication point for data exchange between the lottery game terminal and either lottery agent terminal 11 or a lottery system control computer (not shown). A dual communications port 36 is provided as a peripheral device by which data are transmitted between game processor 34 and video processor 37. 15

A watchdog circuit 33 monitors the running of a control program in game processor 34. Watchdog circuit 33 is a safety circuit that is included to prevent false processing of program data. Any deviation of program selections, such as erroneous timing due to static or component failure, causes termination of game operation. 20

A CMOS memory module 35 provides game processor 34 with a nonvolatile memory to maintain meter, game summary, and status information. CMOS memory module 35 has separate battery powered retention and back-up battery failure detection circuits to safeguard memory-resident data in the case of power or equipment failure. An exemplary battery (not shown), such as a lithium battery, can maintain the data in the memory module more than six months in five years of continuous use. 25

CMOS memory module 35 can also be removed from the microprocessor module during lottery game terminal maintenance or replacement. CMOS memory module 35 can thereafter be replaced in new or remanufactured equipment while maintaining the meter information intact. An exemplary memory backup circuit may be provided by a "Look-Ahead State-Saving Device", which is the subject of pending patent application Serial No. 447,358, filed 6 December 1982, invented by Logan L. Pease and William Wells, and assigned to IGT Corporation of Reno, Nevada, the assignee of the present patent application. 30

Video processor 37 provides signals to select and display images on color monitor 20. Because color monitors are well known in the electrical arts, a circuit diagram of an exemplary monitor is not considered necessary for a complete, enabling disclosure of the present invention. Images formed by color monitor 20 are composed of image element character blocks represented in an addressable character memory 47. The image element character can be moved to any location on the video display screen area, held stationary, or moved continuously. Video processor 37 provides all video operations for the game in accordance with commands transmitted from game processor 34 via a dual communications port 36. Video processor 37 may be of the type described in pending patent application Serial No. 406,672, filed 9 August 1982, entitled "Video Processing Architecture", invented by Wesley F. Carmean, and assigned to the assignee of the present patent application, IGT Corporation of Reno, Nevada. 35

A cathode ray tube (CRT) control circuit 38 operates under video processor control and generates control and addressing signals for a character generator circuit 39 and also generates horizontal/vertical video synchronization signals for color monitor 20. Each image element character block is stored in character generator circuit 39 and addressed by character memory 47. Character memory 47 is loaded by video processor 37, which controls the makeup of images. Provision is also made within CRT control circuit 38 for interfacing light pen 13. Light pen 13 provides an optical link between color display 20 and microprocessor module 12. The light pen has an armor shielded cable to prevent breakage due to misuse or vandalism. 40

A plane color control circuit 40 mixes image element character blocks from character generator circuit 39 to make up each of the displayed image planes. The image planes can be moved continuously in any direction or held in a stationary position on color monitor 20. Plane color control circuit 40 also provides color selection information to each of the displayed image planes. 45

The assembled image, which consists of a composite of stationary and movable parts within the several displayed image planes, is provided to a digital-to-analog converter circuit 41. Digital information that comprises the game images is converted by the digital-to-analog converter circuit 41 to analog video signals corresponding to the signal components and representing the primary colors red, green, and blue. Video signal information is coupled via an external connector (not shown) to color monitor 20. Horizontal and vertical synchronization pulses from CRT control circuit 38 are also coupled to color monitor 20 at this connector. 50

Tone generator module 16 produces a wide range of sound effects in response to commands sent to it from microprocessor module 12 via I/O module 14. Input interface circuit 42 includes input optical isolators to provide a unidirectional communication path between microprocessor module 12 and tone generator 55

module 16 having high immunity to noise. Such noise immunity is the result of electrical isolation of tone generator module 16 from I/O module 14.

A tone processor 43 operates under control of a program resident in a tone processor memory 44 to supervise the decoding, command instructions, and data flow in tone generator module 16. A

5 programmable sound generator circuit 45 receives commands from tone processor 43 and produces 5 selected audio signals in accordance therewith. Flexible programming capability allows a wide variety of sound effects and music to be produced with a single system. Audio power amplifier 46 amplifies audio produced by sound generator circuit 45 to drive loudspeaker 17.

Printer interface 18 controls a bidirectional communication link between game processor 34 and solenoid 10 motor driver circuit 51. Solenoid motor driver circuit 51. Solenoid motor driver circuit 51 activates printer 10 and paper cut mechanism 21. Printer interface 18 also activates a paper advance mechanism within printer 19 and detects a paper low condition.

Input/output buffer 48 is a bidirectional communication link between printer interface 18 and I/O module 14. Data input to printer interface 18 are in the form of ASCII characters and commands. Outputs from printer 15 interface 18 are status and error bits for detecting problems occurring during otherwise normal operating 15 conditions.

A printer processor control and character program resident in memory 50 provides operating instructions for printer interface processor 49, which in turn supervises all decoding, command instructions, and data flow in printer interface 18. In case of power failure, a power detect circuit associated with printer interface 20 processor 49 maintains processor integrity by providing failure detection messages to microprocessor 20 module 12.

Solenoid power source for activating stepper motors (not shown) within a print head driver and solenoids (not shown) within the printer and the paper cut mechanism. Printer sensor (paper low, etc.) and paper cutter sensor outputs are routed through a sensor buffer circuit 52 to printer interface processor 49. The specific 25 mechanical structure of the printer is not shown herein. The mechanical aspects of printers are well known in the mechanical arts - a discussion of these aspects in this patent application is not considered necessary to provide a complete enabling disclosure of the invention.

Figure 3 is a schematic diagram of an exemplary microprocessor module. Table 1 provides a list of industry standard components that may be used in an exemplary embodiment of the invention constructed 30 according to the circuit disclosed in Figures 3-5. Game processor U39 operates in accordance with program instructions stored in ROM memory U38/U37. Communications between the microprocessor module and the other modules in the circuit are via optoisolators U3/U11-U15. Communications with video processor 37 are via dual communications port 37, which is comprised of latches U52/U53. Game microprocessor U39 also includes a half duplex serial data line for two-way communication with an agent terminal in a lottery 35 system. A plurality of lottery game terminals are provided in the exemplary embodiment of the invention. Each lottery game terminal is connected to the serial bus in parallel with the other lottery game terminals. An agent terminal or central computer addresses a selected one of the lottery game terminals by sending a unique header message which may be hardware or software detected only by the addressed lottery game terminal. Thus, the first data word shifted to the data bus from shift register U40 is only recognized by a 40 particular lottery game terminal. In other embodiments of the invention, a hardware decoder and latch circuit (such as circuit 11a shown in Figure 2B) may be set when a unique switch-selected data word is received at the addressed lottery game terminal.

TABLE 1

Exemplary components listing

5	Identifier	Figure	Industry designation	5
	U2/U3/U11-U15	3	GN139	
	U10		2003	
10	U16/U41		74LS04	10
	U22		LM3302	
	U23		4584	
	U24		74LS138	
	U25		74LS193	
15	U26		4098	15
	U28		4040	
	U29		4027	
	U38/U37		2764	
	U38		74LS373	
20	U39		8051	20
	U40		4094	
	U42		4021	
	U52/53		74NC374	
	U54		74LS32	
25	U57		74LS74	25
	U87		LM338	
	U1/U3/U11/U19/U32/U43	4	2003	
	U2/U35/U36/U41		4021	
30	U4-U6/U9/U10/U12/ U16-U18/U20/U24/ U26/U29/U33/U34/ U37/U38/U40			30
	U8/U15/U23/U30/U39		H11A1	
35	U21/U22/U27/U28		4094	35
			14584	
	U1	5	LM323	
	U2		MDAA970	
	U3		TDA2002V	
40	U4		MC14013	40
	U5		4096	
	U6		LM324	
	U7-U10		8912	
	U12-U18		H11A1	
45	U19		LM3302	45
	U20		MC14028	
	U21		74LS373	
	U22		2732A	
	U23		8039	
50				50

Figure 4 is a schematic diagram of a lottery game terminal interface module. The diagram shows a plurality of latches that are addressable according to a decoded memory address present at decoder U2. When addressed, each latch produces an output signal indicative of a signal condition at the latches input. Accordingly, optoisolated output signals are provided to operate various lottery game terminal features.

Some such operation is the result of address and data information provided by the microprocessor module. Other such control is a function of combinational logic in the interface module itself. The interface module also provides a data bus which couples the microprocessor module to the tone generator module.

Figure 5 is a schematic diagram of an exemplary tone generator module. Data from the interface module is coupled to the tone generator module by means of optoisolators U12-U18. A sound generator circuit U7-U10 produces tones in accordance with data supplied from the interface module and under the control of a central processing unit U23. The CPU operates the sound generator circuit to generate these tones in accordance with tone program instructions stored in EPROM U22. Signals output from tone generator U7-U10 are mixed at a summing amplifier U6-U7, filtered by low pass filter U8-1, and amplified for reproduction by speaker at a cabinet mounted amplifier U3-4. Various switches S1 are included that may be set to preprogram certain sound effects.

Lottery game terminal packaging provides modular construction such that all assemblies can be easily removed or replaced for field service. The major assemblies packaged in lottery game terminal (as shown in Figure 1) include the following:

1) Monitor Assembly - the monitor assembly contains a shielded color monitor 20 having four-way mechanical adjustment of viewing angle. A card cage assembly (not shown) is provided in a locking container to house microprocessor module 12, I/O module 14, and tone generator module 16. A power assembly (not shown) is also provided which contains a transformer, line filter fuses, circuit breaker, and line switch. A printer assembly includes printer 19, printer interface 18, paper, paper cut mechanism 21, and a paper holder.

2) Coin Handlers - coin handling is aided by use of electronic acceptors - preadjusted assemblies that sense metallic content and size of coin for acceptance.

3) "Coin In" Detector - coin-in detector 22 is an optical into the lottery game terminal to initiate game play. A holding cup (not shown) is provided to hold these coins until the game is started by player or coin reject switch selection. If coin reject switch operation is sensed, the coins are returned to the player. If the player starts the game, the coins are diverted to the drop box. It should be appreciated that some of the elements and components relating to the present invention are not shown in the figures herein or are not discussed in detail. Those elements and components are considered to be well known in the art and, at any rate, not essential to an understanding of the invention and are not elements or components of the invention itself at the point of novelty.

All assemblies can be accessed at front and top portions of the lottery game terminal. This arrangement expedites service and maintenance activities. Various lamps within the lottery game terminal include a service lamp; a convenience outlet is also provided. Printer paper is accessed by opening a top portion of the lottery game terminal.

Security enhancements to the present invention include a recessed connector housing (not shown) to protect connectors and cables. The connector housing is water tight and therefore resistant to damage resulting from spilled beverages. A two-stage error indicator lamp (one of lamps 26) is mounted at a top portion of the lottery game terminal to indicate game door open and game malfunction. A flange around the door frame prevents unauthorized entry into the game cabinet. Optical door open detector 25 detects if the door is unlocked and/or opened and produces an actuating signal in response thereto.

Lottery game terminal security measures include a metal lined cabinet, stages multi-key cabinet entry, and electronic coin acceptors having anti-stringing and anti-slugging measures which include an agent alarm. Also included is a last game recall to help resolve game result disputes and static and RFI protection circuits.

The lottery game terminal reports maintenance problems and security violations to a central computer through a serial link with the agent terminal. A separate memory section is provided having keyed entry (agents do not have key to this compartment) and electronic door open detection. There is a continuous self testing of memory and provision for external memory verification.

Game program software is resident in the game terminal, rather than being down-line loaded. In this way, the possibility of reprogramming a game terminal or intercepting a game program is eliminated. The game includes a secure coin container, having a heavy duty door and separate keyed entry. Power-down and surge protection is provided, and an optical door open condition reporting circuit is also provided. Memory is battery backed-up and may be removed to prevent tampering during a maintenance routine. Additionally, the printer uses a unique paper stock that is subject to state lottery control and upon which characters are printed according to a proprietary printer font that is not readily duplicated.

Game states are described here to aid in explaining the various functions of the games. Fixed states are described for all games because this approach simplifies a supervisor software program considerably and allows the supervisor program to perform nearly all game-independent functions. The first eight states (0-7) are reserved for the supervisor program. The remaining states are assigned by the game-dependent code as desired.

State 0 is the idle state, although state 0 also includes all of the following functions:

1. Sees that the remote agent terminal is operational and locks out the game if it isn't.

2. Enables the coin lockout(s) if no credits are available for play.
3. Monitors the coin detectors and play credit switch, and goes to state 1 when a coin is inserted or a credit is bet. Monitors the meter display switch and performs the related displays. (Display meters is a separate function called by state 0, not an integral part of it.)
- 5 4. Monitors the light pen position and switches between game display and the pay table as requested by the player. 5
5. Switches among the four games if the player selects the "change game" soft switch on the screen.
6. Monitors the cash out switch and goes to state 7 to print a ticket (or cash out for gaming machines) when it is pressed.
- 10 7. Performs the "attract mode" functions (switching from game to game displaying "last game" and "pay table" for each game) after no play has taken place for one minute. 10
- The game is in state 1 whenever the current wager (credits plus coins) is non-zero and less than the maximum bet for the game currently selected. Pressing the coin reject switch returns all coins in escrow (coins deposited by the player for the current game). If no credits were bet before inserting the coin(s) that were returned, then the game reverts to state 0. If credits have been bet, the coins cannot be returned and the player must play the game. 15
- Game-dependant code is called periodically to allow the game to select numbers, start the game, etc. The game may be started from state 1 (providing the bet is even and the correct number of squares have been selected.) This is to allow for additional coin(s) after the lockout(s) are disabled.
- 20 The game is in state 2 whenever the maximum bet is made but before the game is started. 20
- Game-dependent code may allow selection of numbers, etc. in this state. The lockout(s) are disabled. However, if additional coins are detected or if the coin reject button is pushed, the coins are returned as in state 1. This state monitors the start switch and the "start" soft switch.
- State 3 is the game accounting state. State 3 first waits 250 msec. in case an additional coin is detected. If not, the coins that are in escrow are dumped into the drop and counted. The mechanical and CMOS RAM memory "games played" meters are incremented. The "last game" is saved for display in meter mode. 25
- (Game dependent code saves the necessary information in whatever state(s) is(are) most convenient for that game.)
- State 4 is the loser state. The video and sound processors are notified of the loss. State 5 is the winner state. The video and sound processors are notified of the winner. If the amount won equals the wager (i.e. bet returned) then this is considered a "free game" and no credits are awarded. The video processor displays "free game" and the game processor turns on the play credit lamp. When the play credit switch is pressed, control passes to state 2 where the free game progresses like any other game. (No credits were awarded and, since the first two states were bypassed, no credits have been played.) The free game cannot be cashed out and switching to another game is not allowed until the free game has been played. If desired, other arrangements can be provided for handling free games. 30
- State 6 is the hand paid jackpot/high tier win state. This state gets control whenever a prize over a certain amount is won. The credit meter is incremented while "HAND PAY CALL ATTENDANT" flashes on the screen. Then control is transferred to state 7.
- 40 State 7 is the cash out/print ticket state. This state gets control whenever the player elects to cash out. This state coordinates with the agent terminal (if provided), zeros the credit meter and prints the lottery ticket. States 6 and 7 may be combined in various ways for lottery applications. However, they are separate in the preferred embodiment of the invention to allow multiple gaming games in a single cabinet. 40
- All states above are never game-dependent. Generally, state 8 is the spin/shuffle/deal state and state 9 is the evaluation state. However, any number of states may exist between state 3 and states 4-6. The supervisor in this instance gives control to state 8 when state 3 is done. 45
- There are a number of 4-byte meters in CMOS RAM memory in addition to five mechanical meters (not shown). Some CMOS RAM memory meters apply to totals for all games, and some apply to only the totals for one game.
- 50 The following CMOS RAM memory meters are provided for each of the games in the lottery game terminal: 50
1. COIN IN meter: This represents the total value of all coins played and sent to the drop. This number is the sum of the number of quarters plus four times the number of Susan B. Anthony dollars. The COIN IN mechanical meter is the sum of the four COIN IN CMOS RAM memory meters.
- 55 2. CREDITS WON/JACKPOTS meter: This meter records the total of all credits won for this game including high tier wins but excluding free games. The corresponding mechanical meter contains the total of the four CMOS RAM memory meters divided by 10. 55
3. CREDITS PLAYED meter: This meter records the total credits bet on this game, excluding free games. The corresponding mechanical meter contains the total of the four CMOS RAM memory meters.
- 60 4. There are ten GAMES PLAYED meters for each game. The first meter counts the number of games played with a \$.25 wager. The second meter counts the number of \$.50 games, etc. There are meters for wagers from \$.25 to \$2.50. Any combination of credits and coin totaling \$1.00 is recorded on the 4th meter. The grand total of all forty (4 x 10) GAMES PLAYED meters is recorded on the GAMES PLAYED mechanical meter. 60
- 65 5. FREE GAME meter: This meter contains the number of free games awarded by this game. 65

6. WINS meter: (Same as for gaming)
 7. LOSSES meter: (Same as for gaming)
 The following meters record exceptions and are not duplicated for each of the four games:
1. CASHOUT meter: This meter records the total amount cashed out (i.e. tickets printed). This meter
 5 represents all amounts in quarters, not dollars. The CASHOUT mechanical meter is the sum of the four
 CASHOUT CMOS RAM memory meters divided by 10.
 2. COIN IN TILT
 3. RESETS
 4. DOOR OPENS
 - 10 5. SUSAN B. ANTHONY DOLLARS meter: This meter counts the number of Susan B. Anthony dollars
 played on the game. The only purpose of this meter is to show the relative popularity of Susan B. Anthony
 dollars. It is not needed for any accounting purposes and it has no corresponding mechanical meter.
 Internal RAM memory is allocated essentially as follows. All internal RAM locations are available for
 game-dependent use. Since all four games are using the same RAM locations for different purposes, the
 15 memory locations cannot be preserved when a player switches games. The memory locations are preserved
 between states during the play of one game.
 External program memory (EPROMs) is allocated as follows:
 1. 2000-32FF is for the supervisor program and library routines.
 2. 3300+ is for the game-dependent code for the four games. The supervisor/library and the four games
 20 each occupy a different memory segment and are linked together accordingly.
 - External CMOS RAM memory is allocated as follows:
 1. 1000-10FF belongs to the supervisor. The library routines including the interrupt handlers also use this
 area. The four games read and write this area when necessary for communication with the supervisor or the
 library routines.
 25 2. 1100-11FF belongs to game #1. The game-dependent meters go here, along with last game information
 and anything else the game needs to store. Only game #1 can write into this area, except when all of CMOS
 RAM memory is cleared after a cold startup.
 3. 1200-12FF is for game #2. It is used the same way game #1 uses 1100-11FF.
 4. 1300-13FF is for game #3. It is used the same way #1 uses 1100-11FF.
 30 5. 1400-14FF is for game #4. It is used the same way game #1 uses 1100-11FF.
 6. 1500-15FF is available for any future use.
 7. 1600-16FF is used for communications with the agent terminal.
 8. 1700-17FF is the communications area for the video processor. This is the only area into which the video
 processor may write. The video processor can read any location in CMOS memory.
 35 The supervisor and library routines are assembled using the following inputs:
 1. MACRO file.
 2. EQUATE file.
 3. SUPERVISOR/LIBRARY code. This file contains all game-independent code including the library
 routines. It includes the majority of the code for all states except for the spin/shuffle/deal state and the
 40 evaluation state. This file contains as many functions as possible to eliminate the need for duplication in four
 different games. This code calls the game-dependent code at the appropriate times to allow the individual
 games to operate according to their special functions.
 Each of the four games is assembled with the following inputs:
 1. MACRO file as used for the supervisor.
 45 2. WHICH GAME file. This file consists of only one line. The line is "WHICH SET n", where "n" is the game
 number from 1 to 4. The value of WHICH is used by the equate file and the game-dependent code to decide
 where to allocate external CMOS RAM memory and external program memory. This is the ONLY hard-coded
 game identification for each game.
 3. EQUATE file as used for the supervisor.
 50 4. GAME-DEPENDENT CODE. This file contains all of the code for the spin/shuffle/deal state and for the
 evaluation state. It also contains small subroutines for each of the other states and for special functions such
 as display meters, start up, etc.
 The above assemblies produce five object files that must be linked together to produce one loaded direct
 access file. All references among these files are resolved by the linker. No hard-coded addresses are used in
 55 any of these files. However, all PUBLIC addresses in the game-dependent code appear at the beginning of
 the module and in the same order. This allows the supervisor to access all four games by adding a constant
 to the address for game #1.
 The following are subroutine entry points in the game-dependent code that may be called by the
 supervisor.
 60 1. POWER UP
 2. STATE 0 (Called at beginning of state)
 3. STATE 0 (Called when the first coin/credit is played)
 4. STATE 1 (Called at beginning of state)
 5. STATE 1 (Constantly called during "wait for coin/start" loop) This subroutine must not take more than a
 65 few msec. to execute.

6. STATE 2 (Called at beginning of state)
7. STATE 2 (Constantly called during "wait for start" loop) This subroutine must not take more than a few msec. to execute.
8. STATE 3
- 5 9. STATE 4 5
10. STATE 5
11. STATE 6
12. STATE 7
13. COIN RETURN. This routine is called whenever the escrow is returned to the player.
- 10 The supervisor jumps to the following game-dependent entry points as needed: 10
1. STATE 8 is given control after state 3 or after a reset during state 8. States 8, 9 and 10 may pass control to each other as required by the particular game.
2. STATE 9 is given control after a reset in state 9.
3. STATE 10 is given control after a reset in state 10.
- 15 4. LAST GAME display is done by game-dependent code. If there is an extra page of meters for a particular game, this entry point takes care of that also. 15
5. SELF-TEST jumps to this entry point for game-dependent self-test functions. The FLASH-CARD "reel strip" is the only example of this function in the exemplary embodiment of the invention.
- The above entry points appear in the order listed for each game and are three bytes apart. Any entry points
- 20 that are not needed by game-dependent code contain a return, a jump to reset code, or whatever is appropriate. 20
- The following data tables/constants appear in the order indicated after the entry points for each game:
1. PROMN. 8 ASCII bytes identifying the game (for display in meter mode).
2. MAXBET. This byte is the maximum bet for this game. This is four (quarters) for all games in the
- 25 exemplary embodiment of the invention. However, this scheme allows for combining other games with different MAXBET values into the same lottery game terminal. 25
3. MAXCO. Two bytes for the maximum pay without declaring a hand-paid jackpot/high-tier win.
4. MAXCOH. Two bytes (HEX) for the maximum cash-out without declaring a hand-paid jackpot/high-tier win.
- 30 5. SOFTBL. This is a variable length table of two-byte entries. Each entry is the row and column location on the screen of the upper left corner of the soft switches used by the game. A byte with a value of -1 signals the end of the table. The entries must be in the following order:
- 1) Game-dependent switches if used
- 2) ERASE (if used)
- 35 3) GAME 35
- 4) PAY TABLE
- 5) START GAME
- 6) CHANGE GAME
- 7) Terminator byte (-1)
- 40 The video processor uses one software assembly with multiple files to build all test strings and to define the screen locations for these strings. Most strings are common to all games, though their locations on the screen are usually different. This generalization applies to the "WINNER PAID", message, the tilt messages, and the self test and meter display messages. Other strings, including the pay table strings and the text of the traveler may vary from game to game.
- 45 The universal text file reserves space for the row and column for each string for each game. For example, if there are three games, then six bytes are reserved before the string for the row and column values. Subroutines have been added to the video library to display strings stored in this format. By setting a pointer to the first row-column pair, the subroutine uses the current game number to load the correct row/column values and then advance the pointer to the first byte of the string. This system is also used for soft switches
- 50 (light pen actuated display switches). A similar set of subroutines take care of four-byte entries like the row/column/attribute/length for the grower. 50
- A separate file is used to define the string data for each game. This file is divided into two basic sections. The first section defines the row/column locations for all universal strings used by that game. This section includes traveler, grower, soft switches, etc.
- 55 The second section is used to define all strings that are unique to a particular game. String handling is accomplished by small "front end" subroutines that deal with new row/column definitions. Some gaming video programs use two or more screen addresses for the same string. 55
- As for the game processor, there is a supervisor/library program and game program for each game. The supervisor/library takes care of power up, communication, self test, soft switches, tilts, meter display, and
- 60 the writing of universal strings the play of the game. The individual video programs for each game take care of writing and updating the "card", displaying the pay table, and any game dependent pages during self test or meter display. 60
- The text string assembly includes the following inputs:
1. MACRO file.
- 65 2. EQUATE file. 65

3. UNIVERSAL STRINGS file. This file contains the strings used by all games, including soft switch locations, traveler and grower texts, etc.

4. INDIVIDUAL GAME STRINGS files. These files contain the row column information for the universal strings, plus the game-dependent strings. There is no information in these files that indicates their game number. The order they are input to the assembler decides which one is game 1, etc.

5 The supervisor and library routines are assembled using the following inputs:

1. MACRO file.
2. EQUATE file.
3. SUPERVISOR/LIBRARY code. This file contains all game-independent code including the library routines. This code calls the game-dependent code at the appropriate times to allow the individual games to operate according to special game functions.

10 Each of the four games is assembled with the following inputs:

1. MACRO file.
2. EQUATE file.
- 15 3. WHICH GAME file. This file consists of only one line. The line is "WHICH SET n", where "n" is the game number from 1 to 4. The value of WHICH is used to decide where to ORG the beginning of the module and which labels to declare as PUBLIC. This is the ONLY hard-coded game identification for each game.
4. GAME-DEPENDENT CODE. These files contain all game-dependent code including special strings and writing and updating the "card".

20 One game processor assembly produces PUBLIC declarations to which the video processor may link. No executable code is produced. This assembly includes the following files:

1. MACRO FILE
2. GAME SIDE EQUATE FILE
3. A 1-line file consisting of "WHICH SET 0"
- 25 4. Files defining all game-dependent RAM locations for each game. These files include PUBLIC statements for locations needed by the video.
5. A file with PUBLIC statements for all game-independent locations needed by the video.

The above assemblies produce object files that must be linked together to produce one loaded direct access file. All references among these files are resolved by the linker. No hard-coded addresses are used in any of these files.

30 ALL PUBLIC addresses in the game-dependent code appear at the beginning of the module and in the same order. This allows the supervisor to access all four games by simply adding a constant to the address for game $\#1$.

The described game software codes and assemblies are included with this application as a microfiche appendix to the application. The disclosure herein is considered sufficient to enable one skilled in the art to practice the present invention. The microfiche appendix is included to show exemplary game software - the software listing therein is not included as an exhaustive software listing. Accordingly, the scope of the invention should not be limited thereby.

35 The games provided by the lottery game terminal invention have color graphics, animation, on-screen player operating directions, and sound effects to attract, instruct, and inform game players. The audio-video components of the game add greatly to the realism, player involvement, and enjoyment of the video lottery game. Each game includes an attract mode, an information mode, a playing mode, and a collect winnings mode. In the exemplary embodiment of the invention, four different games are available for the player to choose from on each game terminal. These games are selected from a display menu (Figure 6) and include a flash card type game (Figure 7), a lotto type game (Figure 8), a reveal matrix type game (Figure 9), and any one of other various games selected for inclusion in the terminal, such as a state landmark-type game (not shown).

40 Players interact with the game through use of a light pen and push buttons, described above. Prizes are automatically accumulated and credited to a player until the player chooses to collect the outstanding prizes of if the winnings exceed a predetermined high tier amount, for example, \$593.

50 Light pen and "soft" push button menu driven interaction between the player and the game are provided because they are easy to use and more "user friendly" than a keyboard or joystick. A "soft" push button is a displayed indicium (e.g. square 200 in Figure 6 and square 201 in Figure 7A) which, when selected by a player with a light pen, produces a defined game event, such as initiating game play. When compared to a touch screen, a light pen/"soft" push button game control mechanism is lower in cost and capable of more accurately selecting small areas of the video display, therefore providing higher resolution. More importantly, a light pen is far more reliable than a touch screen in actual lottery use.

55 In the exemplary embodiment of the invention, lottery games are played in any of a number of coin denominations, for example, \$.50 or \$1.00. Game play is generated randomly and does not involve any player skill. Thus, the game is a game of chance. The maximum prize awarded for any of the games is determined by a specific pay schedule for each game (Figures 7B-9B). Depending on the state lottery system used, the prize can range from a few thousand dollars to over a million dollars. Additionally, the prize can be paid in a lump sum or in installment payments.

60 The choice of games provided with the present invention allows relatively uncomplicated game play while providing a large degree of continuity with familiar scratch-off numbers games now in use. Additional

65

features, such as special drawings, wild symbols, doubling opportunities, bonuses, rollups, or progressives, can be incorporated in the present game terminal to increase excitement, stimulate sales, and expand a player base.

The games illustrated in Figures 7-9 are played as follows:

- 5 1) *Flash Card* - a three-in-a-row column or diagonal game, using a known 9-block tic-tac-toe layout. Numbers ranging from zero to nine flash on and off in the nine blocks. The numbers are played at random. The frequency of each number is inversely proportional to its prize value. There are several prize levels. Matching three identical numbers in any row, column, or diagonal, wins a prize. An exemplary flash card type game display is illustrated in Figure 7A; an exemplary pay schedule for a flash card type game is
10 illustrated in Figure 7B.
- 2) *Lotto* - a 40 block "Pick 6" video lottery game. The game provides an opportunity to increase on-line game play while piggybacking game advertising and promotions costs. Game play win is based on the number of matches. An exemplary lotto type game is illustrated in Figure 8A; an exemplary pay schedule for a lotto type game is shown in Figure 8B.
- 15 3) *Reveal Matrix* - a video match game where the player selects a number of blocks in a 25-block matrix. This game is analogous to the "scratch-off" type lottery game. Player selection of a block with the light pen in effect "scratches-off" an obscuring video display plane to reveal a number or value plane hidden beneath. As each block is selected, a prize denomination is disclosed. If a specified number of blocks match (for example, three) the player wins that prize. Once the game is over, all blocks are disclosed so the player can
20 see how he could have played to maximize his winnings. The location of prize denominations changes at random every time the game is played. An exemplary reveal matrix type game is illustrated in Figure 9A; an exemplary pay schedule is for a reveal matrix type illustrated in Figure 9B.
- 4) *Landmark* - a 5-symbol game, dealt at random, where each symbol shows a state landmark of the state wherein the lottery is located. The number of matching symbols determines the prize, i.e., two of a kind,
25 three of a kind, four of a kind, or five of a kind. The frequency of landmark symbols varies the prize value.
- Other games that may be provided in the present lottery game terminal include non-skill adaptations to sporting and adventure themes, such as golf, tennis, soccer, hockey, car racing, and mountain climbing. Diversionary games can take advantage of common themes, such as puzzles and mazes. Luxury games can use status symbols, such as gold, diamonds, furs, travel, or expensive cars, and the game can be played for
30 such potential prizes. These video games can be provided as daily and weekly games with delayed drawings to be played in addition to the games themselves. Thus, the present invention offers limitless opportunities to develop and perfect game themes, subject only to the requirements of the game program be changed to implement the new games in the terminal.
- For example, the following are other types of games that may be incorporated in the present invention:
35 1) *Number Match* - a number matching game where players select a five, six, or seven digit number, one digit at a time, left to right. A random number program generates a number with a comparable number of digits to compare with the player's number. Prizes are awarded based on the number of digits that are matched in a sequence.
- 2) *Add-up* - a variation of the 25-block matrix with an add-up theme. Players select a specified number of
40 blocks. Each block discloses a number. Players win prizes based on a total accumulated score for the blocks selected. The higher the score, the higher the prize. During game play, the numbers selected are automatically totalled on the screen.
- 3) *Horse Race* - a horse race game involving real horse names and likely odds. A random number generator determines winners.
- 45 4) *Amusement Variations* - versions of popular amusement games where players play the actual game for a short period, but win prizes on a nonskill random basis.
- 5) *Sports Team* - a sports game, with the correct seasonal theme (i.e., football, baseball, basketball). A number of real or fictitious teams are shown on the screen, along with their opponents. The player selects a winner in each game. The random program picks the winner in each contest. Prizes are paid based on the
50 player's total number of correct choices.
- The foregoing was given for purposes of illustration and example. It is contemplated that various equivalent embodiments of the present invention will be suggested by the disclosure herein. For example, other types of games may be played at the present lottery game terminal. Additionally, the game housing and security features may be augmented or dispensed with as required by the game site and application.
55 Therefore, the scope of the invention could be limited only by the breadth of the claims.

CLAIMS

1. A game terminal, comprising:
 - 60 a game processor for controlling operation of any selected one of a plurality of game terminal resident games;
memory means, coupled for communication with said game processor, for storing and retrieving under game processor control a plurality of game control programs, and an associated game-generated game event audit trail;
 - 65 a video processor, coupled for communication with said game processor, for assembling under game

- processor control a display image to accompany game operation;
 a light pen, coupled for communication with said game processor, for selecting a game to be played, and
 for directing game play and game terminal operation; and
 soft switch means in the form of light pen selectable indicia at predetermined display image locations, for
 5 effecting game selection, game play, and game terminal operation by setting said game processor to a 5
 corresponding game operation state, whereby player control of game selection, game play, and game
 terminal operation is provided.
2. The terminal of claim 1, further comprising display means, coupled to said video processor, for
 displaying said assembled display image and for displaying said soft switch means indicium.
- 10 3. The terminal of claim 1, further comprising input/output means, coupled for communication with said 10
 game processor, for transferring signals between said game processor and a plurality of associated game
 terminal devices.
4. The terminal of claim 1, further comprising tone generator means coupled for communication with
 said game processor, for generating under game processor control selected sounds to accompany game
 15 operation. 15
5. A lottery game terminal, comprising:
 microprocessor means for controlling game operation including:
 a) game processor means for controlling operation of any selected one of a plurality of game terminal
 resident lottery games; and
 20 b) a video processor, coupled for communication with said game processor for assembling under game 20
 processor control a display image to accompany said lottery game operation;
 memory means, coupled for communication with said game processor, for storing and retrieving under
 game processor control, a plurality of lottery game control programs and for storing and receiving under
 game processor control an associated game-generated lottery game event audit trail;
- 25 input/output means, coupled for communication with said microprocessor means, for transferring signals 25
 between said microprocessor means and a plurality of lottery game terminal associated devices;
 tone generator means, coupled for communication with said microprocessor means, for generating under
 game processor control selected sounds to accompany game operation;
 a light pen, coupled for communication with said microprocessor means, for selecting a lottery game to be
 30 played and for directing lottery game play and lottery game terminal operation; and 30
 soft switch means in the form of light pen selectable indicia at predetermined display image locations for
 effecting lottery game selection, lottery game play, and lottery game terminal operation by setting said
 microprocessor means to a corresponding game operation state.
6. The terminal of claim 5, further comprising means coupled to said microprocessor means, for
 35 providing bidirectional communications between said terminal and a remotely located terminal supervisory 35
 system.
7. The terminal of claim 5, further comprising a plurality of sensor means, coupled to said
 microprocessor means via said input/output means, for providing accompanying signals corresponding to
 real time lottery game terminal events.
- 40 8. The terminal of claim 5, further comprising indicator means, coupled to said microprocessor means 40
 via said input/output means, for displaying lottery game events corresponding to a lottery game operation
 state.
9. The terminal of claim 5, further comprising meter means for storing and displaying game events and
 transactions.
- 45 10. The terminal of claim 5, further comprising a video display, coupled for communication with said 45
 microprocessor means, for displaying said assembled display image.
11. The terminal of claim 5, further comprising interface means, in communication with said
 micro-processor means via said input/output means, for coupling said terminal to a printer.
12. The terminal of claim 11, further comprising a printer coupled to said interface means.
- 50 13. A lottery game system including a plurality of video lottery game terminals, each lottery game 50
 terminal comprising:
 a microprocessor module including:
 a) a game processor for controlling operation of any selected one of a plurality of game terminal resident
 lottery games;
- 55 b) a video processor for assembling a display image to accompany lottery game operation; 55
 c) a communications port for coupling said game processor to said video processor and over which game
 processor control signals are coupled to said video processor; and
 d) a bidirectional serial interface for coupling said lottery game terminal to said lottery game system;
 an input/output module, coupled to said microprocessor module, for transferring signals between said
 60 microprocessor module and a plurality of associated lottery game terminal sensors and indicators; 60
 a tone generator module, coupled for communication with said microprocessor module, for generating
 under game processor control selected sounds to accompany game operation; and
 meter means for storing and displaying an audit trail of lottery game terminal events and transactions.
14. The terminal of claim 13, further comprising:
 65 a printer; and 65

- a printer interface module, coupled between said printer and said microprocessor module, for transferring data and control signals therebetween.
15. The terminal of claim 13, further comprising a video monitor, coupled to said video processor, for displaying said assembled display image; 5
- 5 said video processor including:
- a) means for generating under video processor control a video monitor vertical and horizontal synchronization signal;
 - b) means for storing and for generating under video processor control a plurality of image elements;
 - c) means for assembling under video processor control said image elements into a plurality of image display planes; and 10
 - d) means for converting signals corresponding to said assembled display image into a video signal for operating said video monitor.
16. The terminal of claim 13, said microprocessor module further comprising means for uniquely identifying said lottery game terminal in a lottery game system by decoding a unique lottery game terminal address provided to said lottery game terminal by said lottery game system. 15
17. In a microprocessor controlled lottery game terminal including a plurality of game terminal resident user selected lottery games, a method for playing a flash card type game, comprising:
- displaying a game matrix;
 - continuously displaying and changing a random series of elements displayed within said display matrix;
 - 20 selecting for static display a plurality of said elements at selected game matrix locations in any of a row, column, and diagonal configuration by means of a light pen;
 - declaring a winner when said selected display matrix locations contain matching elements; and
 - alternatively displaying upon selection thereof a game payout schedule. 20
18. In a microprocessor controlled lottery game terminal including a plurality of game terminal resident user selected lottery games, a method for playing a lotto type game, comprising: 25
- displaying a game matrix;
 - selecting a plurality of disc game matrix locations in random sequence;
 - displaying an element at each selected location;
 - declaring a winner when a selected number of elements at said selected game matrix locations match; and
 - 30 alternatively displaying upon selection thereof a game payout schedule. 30
19. In a microprocessor controlled lottery game terminal including a plurality of game terminal resident user selected lottery games, a method for playing a reveal matrix type game, comprising:
- displaying a game matrix;
 - selecting a plurality of game matrix locations with a light pen;
 - 35 revealing an element associated with each selected location; 35
 - declaring a winner when a selected number of elements at selected matrix locations match;
 - disclosing elements contained at each location in the matrix upon conclusion of game play;
 - randomly changing element location within said matrix; and
 - alternatively displaying upon selection thereof a game payout schedule.
 - 40 20. A terminal substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings. 40

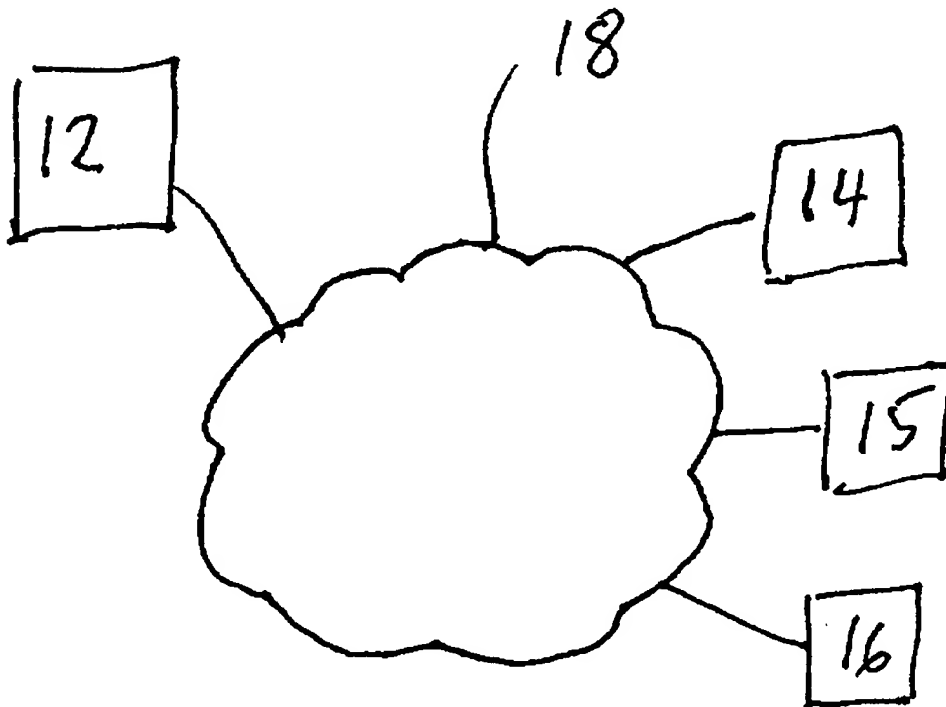
EVIDENCE APPENDIX F
COPY OF RITTMASER U.S. PATENT PUBLICATION NO. 2002/0023010



US 20020023010A1

(19) **United States**(12) **Patent Application Publication**
Rittmaster et al.(10) **Pub. No.: US 2002/0023010 A1**(43) **Pub. Date: Feb. 21, 2002**(54) **SYSTEM AND PROCESS FOR
DISTRIBUTION OF INFORMATION ON A
COMMUNICATION NETWORK**(76) Inventors: **Ted R. Rittmaster**, Westlake, CA (US);
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2630 Grandoaks Drive
Westlake Village, CA 91361 (US)(21) Appl. No.: **09/812,296**(22) Filed: **Mar. 20, 2001****Related U.S. Application Data**(63) Non-provisional of provisional application No.
60/191,003, filed on Mar. 21, 2000.**Publication Classification**(51) Int. Cl.⁷ **G06F 17/60**(52) U.S. Cl. **705/26**(57) **ABSTRACT**

A communications system includes a plurality of recipient processors located at geographically remote locations with respect to each other and connected for communication with an information provider processor, over the communications network. The provider and recipient processors may comprise respective computers coupled for communication on the Internet or WWW. The provider processor is capable of providing information from any suitable source, by communicating such information over a communications network. However, access to the information by the recipient processors is controlled, based on the geographic location or region of the recipient processors. Each recipient processor is operably associated with a positioning system for providing geographic location information corresponding to the location or region in which the positioning system is located, such as a global positioning system GPS. The geographic position information is used to determine whether or not the processor requesting the information is within a restricted (or limited) or non-restricted region. This determination may be made comparing the geographic information provided by the recipient processor and positioning system with a list of non-restricted or non-limited (or a list of restricted or limited) geographic locations or regions.



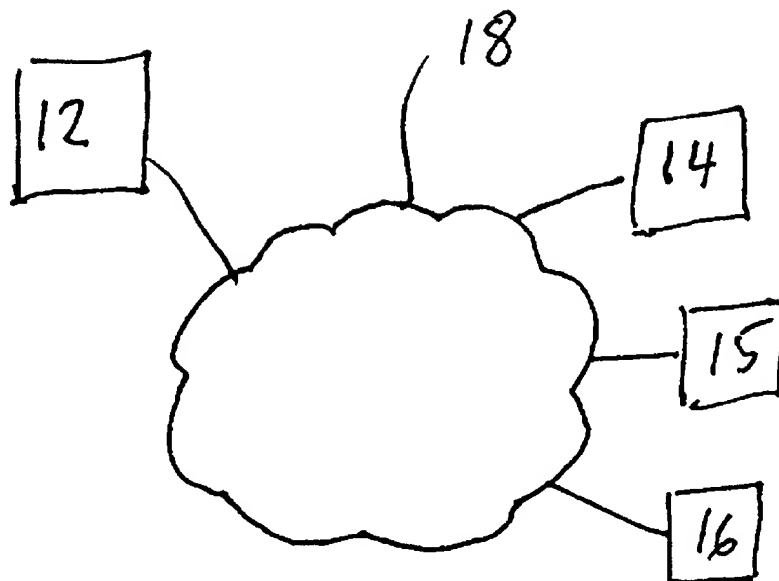


Fig. 1

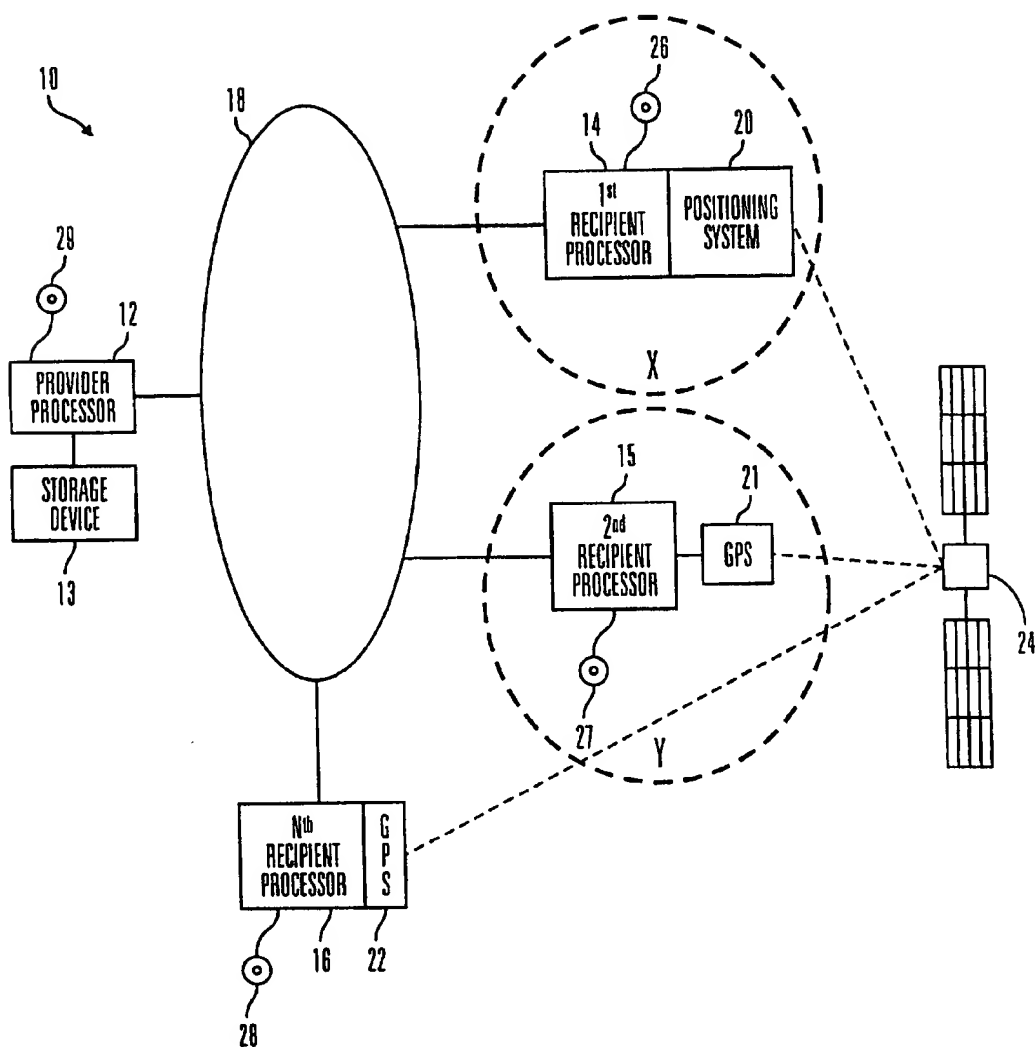


FIG. 2

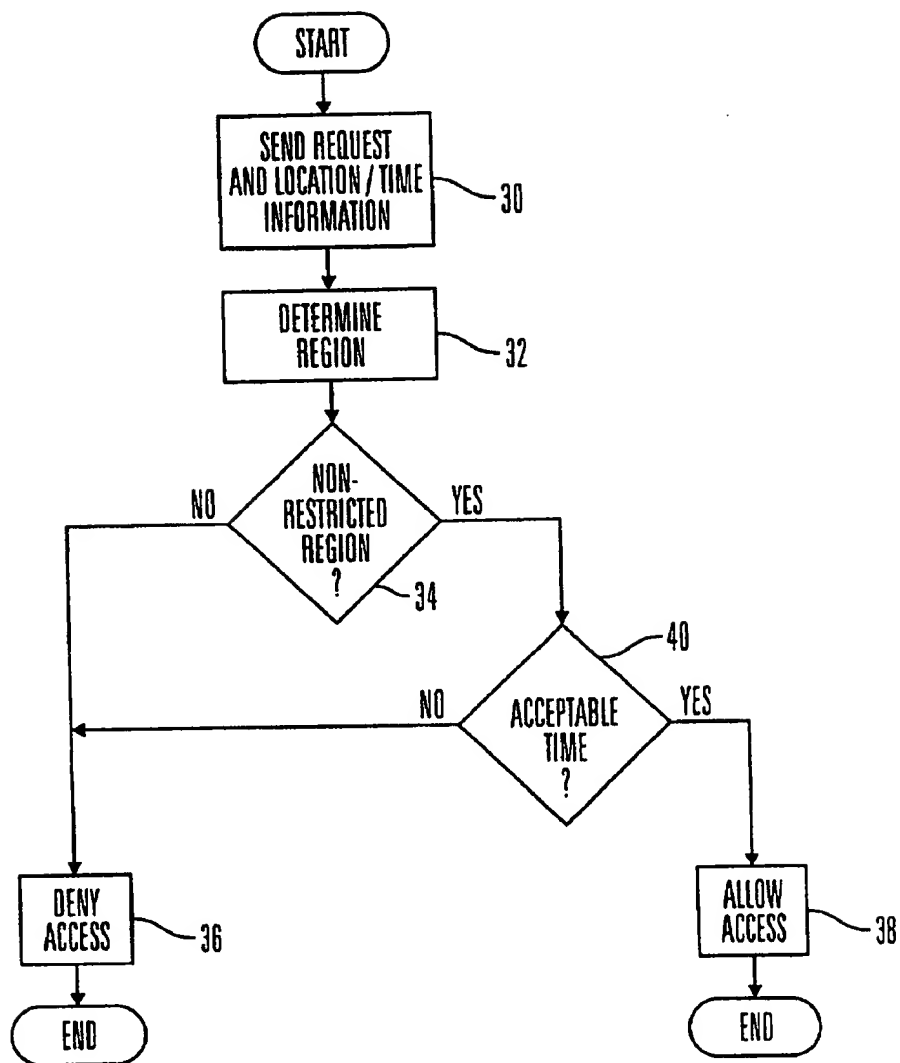


FIG. 3

42



FIG. 4a

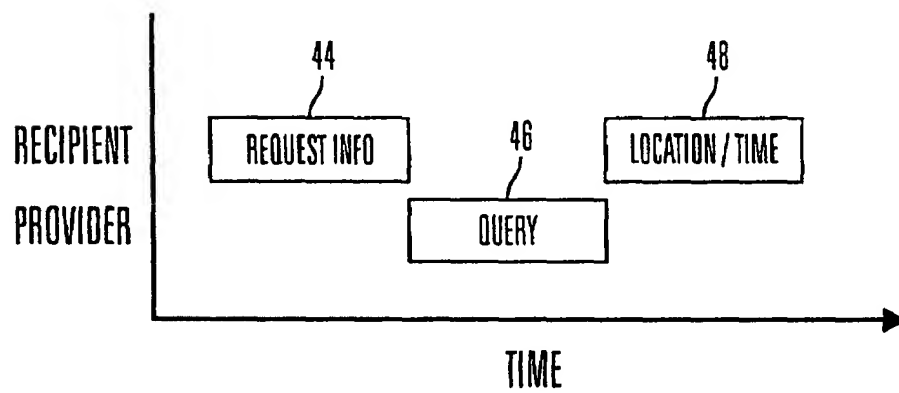


FIG. 4b

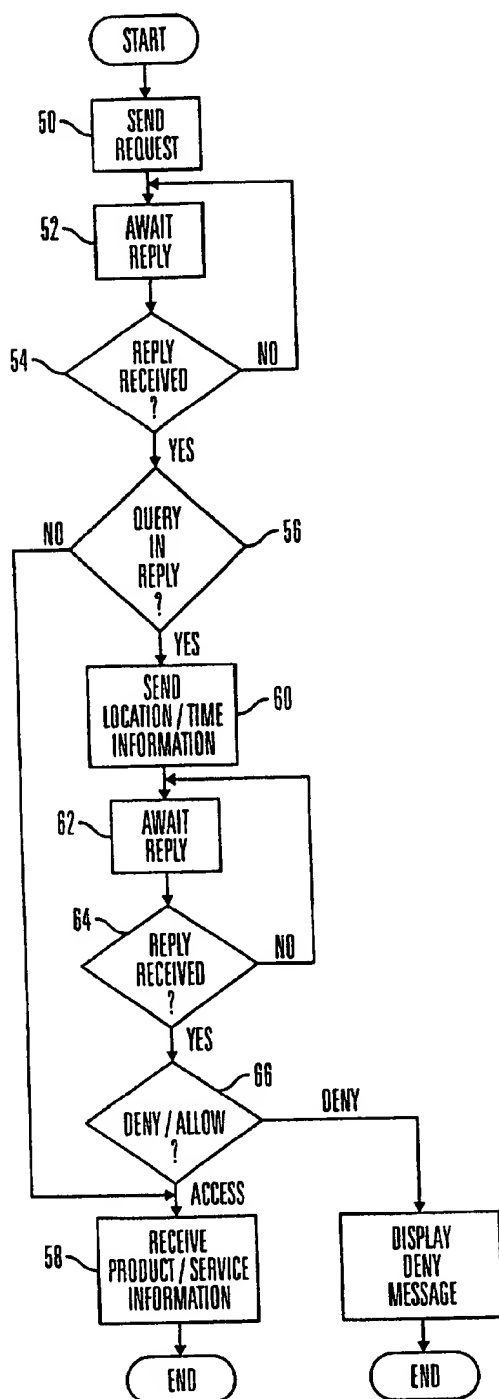


FIG. 5

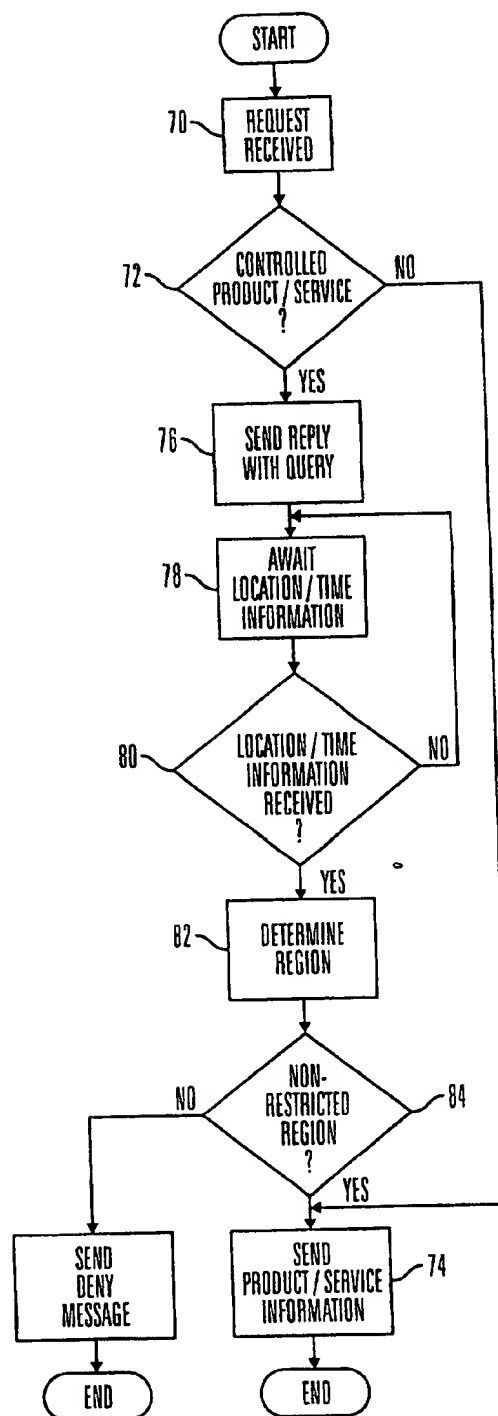


FIG. 6

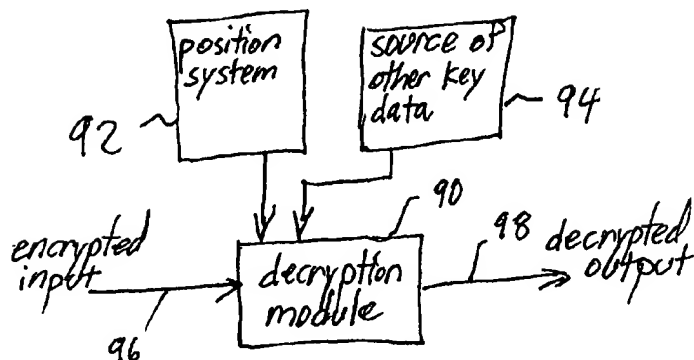


Fig. 7

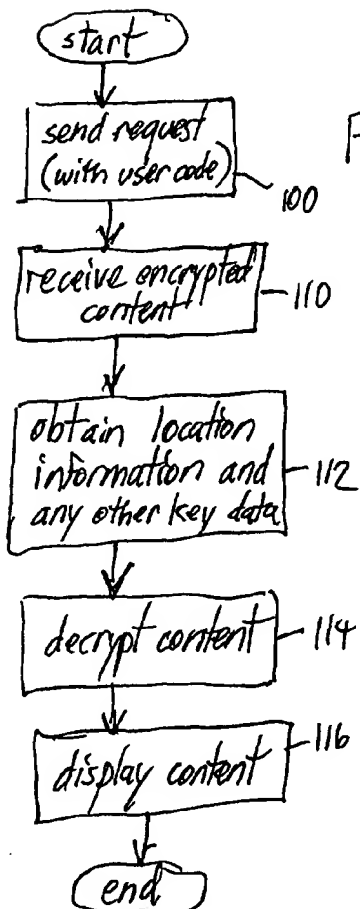


Fig. 8

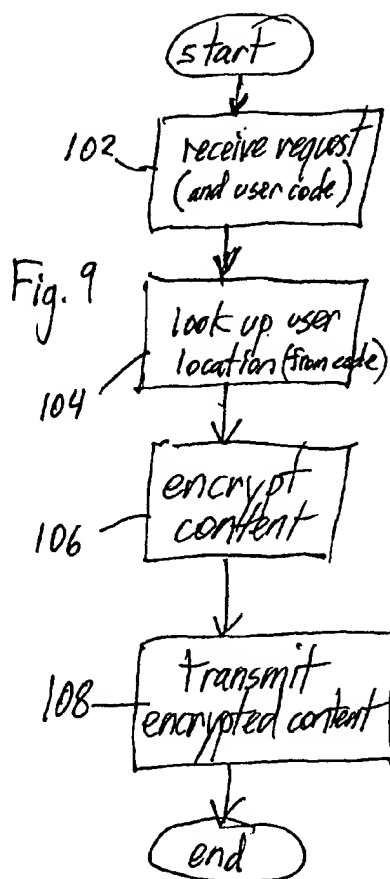


Fig. 9

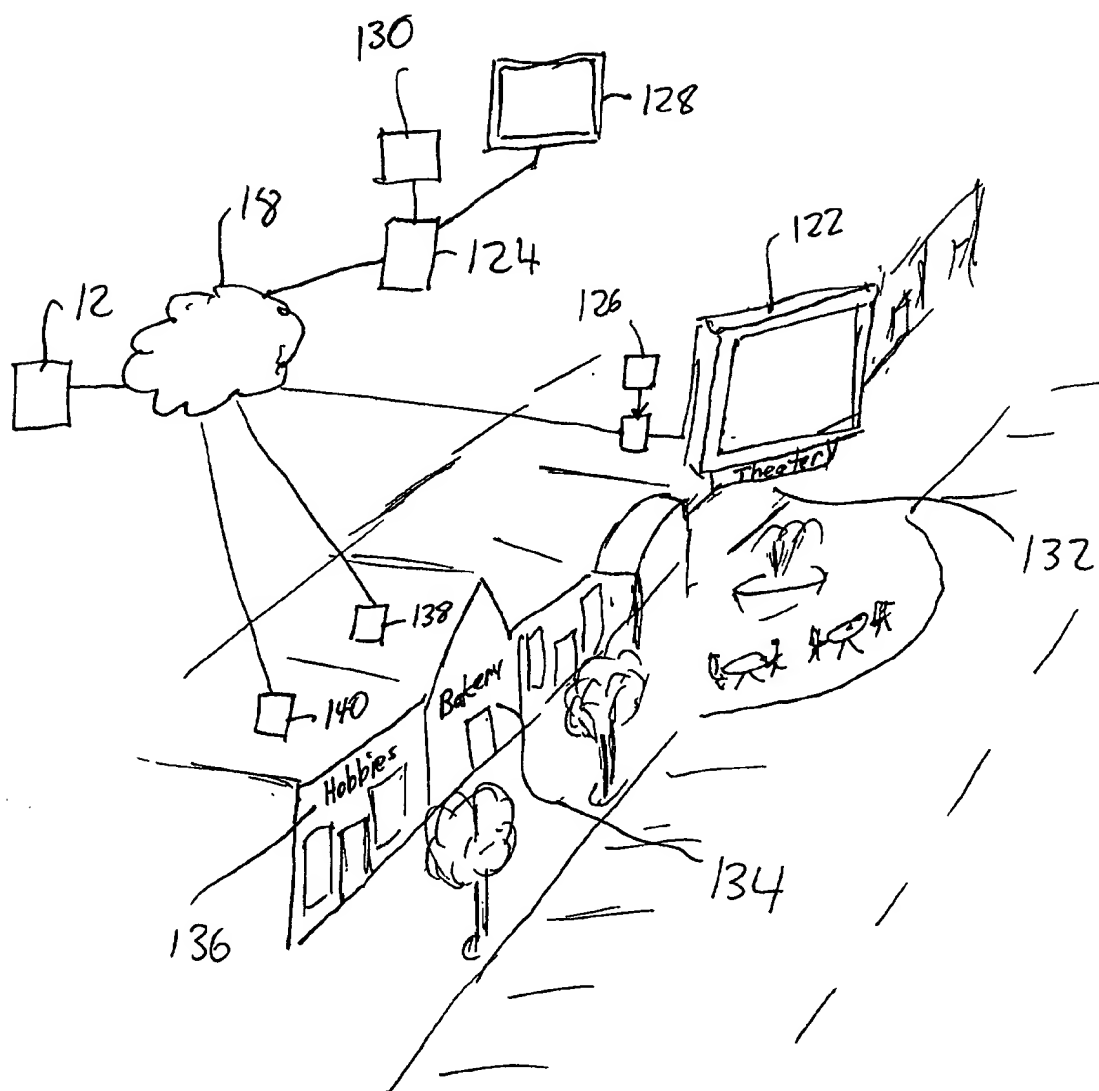


Fig. 10

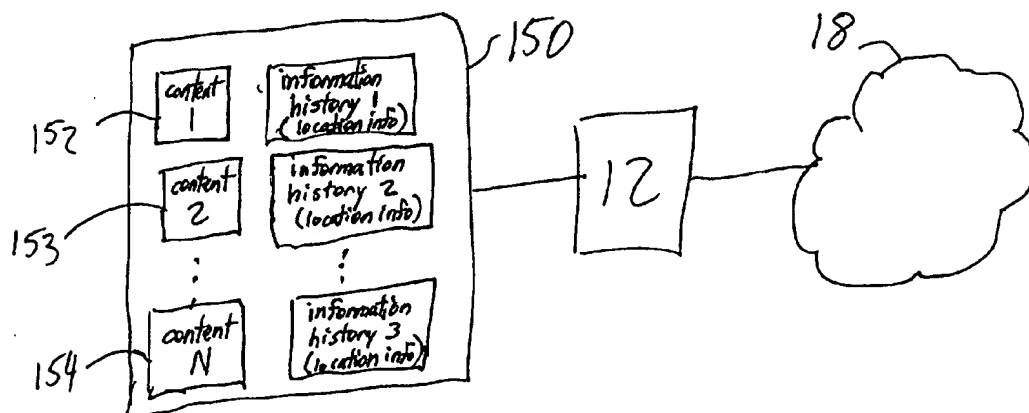


Fig. 11

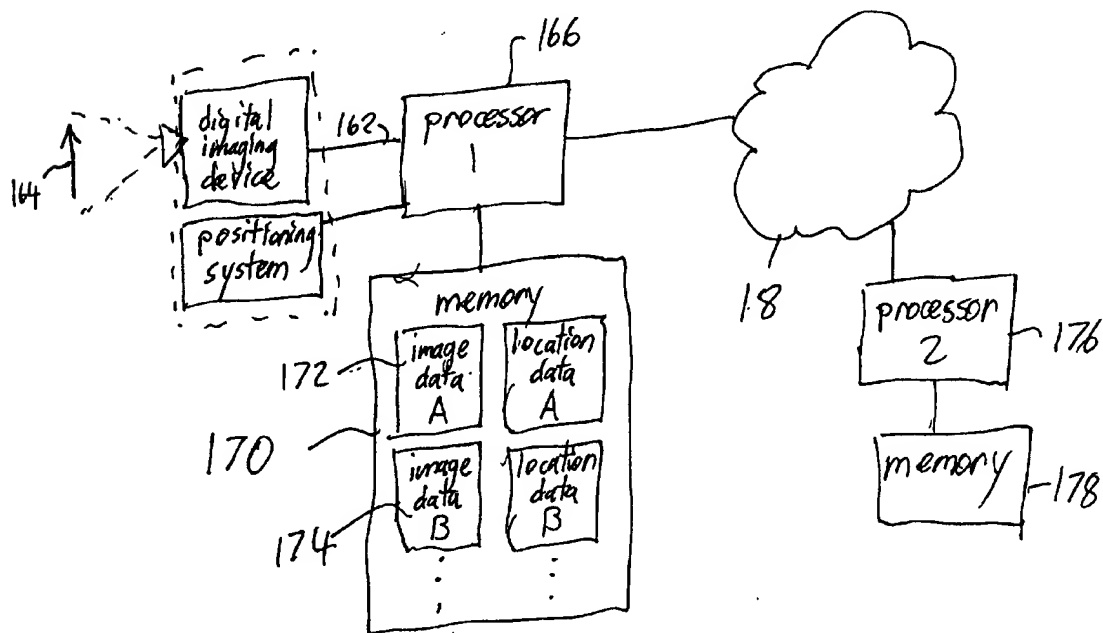


Fig. 12

SYSTEM AND PROCESS FOR DISTRIBUTION OF INFORMATION ON A COMMUNICATION NETWORK

RELATED APPLICATION

[0001] The present invention relates to U.S. Provisional Application 60/191,003, filed Mar. 21, 2000, which is incorporated herein by reference and from which priority is claimed. The present invention also relates to U.S. Pat. No. 6,154,172, issued Nov. 28, 2000 and PCT Application No. PCT/US99/06943, filed Mar. 30, 1999, each of which is incorporated herein by reference.

FIELD OF THE INVENTION

[0002] The present invention relates, generally, to a system, process and article of manufacture for distribution of information on a communications network and, in preferred embodiments, to such a system, process and article for distribution of information on the Internet or World Wide Web, based on the geographic location of the internet or web user requesting the information and/or the geographic location of the information provider.

BACKGROUND OF THE INVENTION

[0003] The Internet and World Wide Web (WWW) have opened vast new global marketplaces and opportunities for companies, organizations, institutions and individuals to distribute and obtain information and to interact verbally and visually with others, virtually on a world-wide basis. By employing the Internet and WWW, companies and groups of all sizes and individuals may have, in effect, a world-wide market in which to distribute information, products and services using the Internet or WWW (including, but not limited to, programs, movies, photographs, and other information that can be transmitted over the Internet or WWW).

[0004] However, such a geographically expansive marketplace can be problematic for contexts in which the information, products or services are intended for a particular geographic area or location. Typical web site operators have no control over or knowledge of the geographic area or location of a user accessing the web site and, thus, no control over the area or location at which its web site content may be read, viewed or otherwise downloaded. Similarly, typical Internet or web users have no control over or knowledge of the geographic area or location of the web site's operator server from which the web site content is read, viewed or otherwise downloaded.

[0005] Consider, for example, a company or individual involved in the business of selling a product or service, but which is constrained under statute or contract to a limited geographic sales region. In one representative example, a software company contracts with various software distribution companies to sell its software in specified sales regions, wherein each distributor is provided a sales region and, under the terms of the contract, is not allowed to sell the software outside of the region. A distribution company may desire to employ the Internet or WWW as a distribution channel, but would need to limit sales (and access to the distributed software) to only those Internet users (customers) that are located within the region assigned to that company.

[0006] As another example, consider a company or individual in the business of providing a lottery or other game

in which a fee is required to play and the player is provided with a chance to win money or prizes. Under many legal jurisdictions (which can also be defined in terms of geographic areas), such lotteries and games may be illegal or otherwise limited by gambling statutes, rules or regulations. Again, the company or individual may desire to offer the lottery or game service over the Internet or WWW, but also avoid potential legal liability for offering such services to Internet users that are located in a geographic region of an adverse legal jurisdiction.

[0007] As yet another example, consider a company, organization or individual involved in distributing information having a content that is politically or ethically sensitive in certain geographic regions, but not other geographic regions. Again, the company, organization or individual may desire to provide the information over the Internet but, for political, ethical or legal reasons, may also desire to limit the accessibility to the information to certain geographic regions.

[0008] Thus, in a number of contexts, there is a need in the industry for a system by which a provider of a service or product on the Internet may readily limit access to the product or service, based on the geographic region in which the user requesting the product or service is located.

SUMMARY OF THE DISCLOSURE

[0009] Embodiments of the present invention relate to a system, process and article of manufacture for limiting the distribution of information on a communications network based on geographic location. In preferred embodiments, the invention relates to such a system, process and article for limiting distribution of information on the Internet and World Wide Web (WWW), based on the geographic location of the Internet user requesting the information.

[0010] A system according to a general embodiment of the present invention includes at least one information provider processor which is coupled to a plurality of recipient processors on a communications network. The recipient processors are located at geographically remote locations with respect to each other and connected for intercommunication with the provider processor, over the communications network. In preferred embodiments, the provider and recipient processors comprise respective computers coupled for communication on the Internet.

[0011] The provider processor is capable of providing information from any suitable source, by communicating such information over a communications network. However, access to the information by the recipient processors is controlled, based on the geographic location or region of the recipient processors.

[0012] Each recipient processor operates with an associated means for providing a position signal. Various embodiments of the invention may employ any suitable means which provides a computer readable signal that corresponds to the position, or geographic location, of the recipient processors, including, but not limited to, devices for generating pre-recorded geographic information and user-operated input devices. However, in preferred embodiments, the geographic location information is generated by a means which calculates the location from information received at the location from satellite signals, such as a global positioning system GPS.

[0013] The geographic position information is used to determine whether or not the processor requesting the information is within a restricted (or limited) or nonrestricted region. This determination may be made by any suitable procedure, including, but not limited to, comparing the geographic information provided by the recipient processor and positioning system with a list of non-restricted or non-limited (or restricted) geographic locations or regions. Thus, according to some embodiments, information may be provided or not provided (access to the information may be allowed or denied) dependent on the geographic information provided by the recipient processor, such that, if a recipient processor provides geographic information corresponding to a restricted geographic location or region, then the provider processor will be controlled to not provide selective information to the recipient processor. On the other hand, if a recipient processor provides geographic information corresponding to a non-restricted geographic location or region, then the provider processor is controlled to provide the selective information to the recipient computer.

[0014] In further embodiments, a set of rules may be implemented, depending upon the geographic information (and, thus, the geographic location or region) such that various restrictions or limitations may be implemented for various geographic locations or regions. Thus, if a recipient processor provides geographic information corresponding to a first geographic location or region, then the provider processor may be controlled to not provide selective information to the recipient processor, unless further criteria is met. For example, such further criteria may include, but is not limited to, a minimum user age, a particular period of the day, week, month or year, or other suitable criteria. Other geographic locations or regions may be associated with similar or other limitations or restrictions to the access of information from the provider processor.

[0015] In this manner, the distribution of information on a communications network may be controlled, based on geographic location of the recipient of the information.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] A brief description of preferred embodiments of the invention will be made with reference to the accompanying drawings, wherein:

[0017] FIG. 1 is a generalized schematic view of a wide area network system, which may be used to implement embodiments of the present invention.

[0018] FIG. 2 is a generalized schematic view of a system according to an embodiment of the present invention.

[0019] FIG. 3 is a flow chart representing a process carried out by the system of FIG. 1, according to an embodiment of the present invention.

[0020] FIG. 4a is a block diagram representing a communication packet provided by a user computer of the system shown in FIG. 1, according to an embodiment of the present invention.

[0021] FIG. 4b is a block diagram representing communication packets provided by a user computer and the provider computer of the system shown in FIG. 1, according to a further embodiment of the present invention.

[0022] FIG. 5 is a flow chart representing an example embodiment of a process carried out by a user computer of the system shown in FIG. 1.

[0023] FIG. 6 is a flow chart representing an example embodiment of a process carried out by the provider computer of the system shown in FIG. 1.

[0024] FIG. 7 is a generalized block diagram of a decryption module system.

[0025] FIG. 8 is a flow chart representing another example embodiment of a process carried out by a user computer.

[0026] FIG. 9 is a flow chart representing another example embodiment of a process carried out by a provider computer.

[0027] FIG. 10 is a generalized representation of a shopping area which employs a system according to an embodiment of the present invention.

[0028] FIG. 11 is a generalized block diagram of a system for associating content and recipient information in a memory.

[0029] FIG. 12 is a generalized block diagram of a system for associating image information with location information.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0030] The following detailed description is of the best presently contemplated mode of carrying out the invention. This description is not to be taken in a limiting sense, but is made merely for the purpose of illustrating the general principles of the invention. The scope of the invention is best defined by the appended claims.

[0031] As summarized above, the present invention relates, generally, to a system, process and article of manufacture for limiting the distribution of information on a communications network based on geographic location and, in preferred embodiments, to such a system, process and article for limiting distribution of information on the Internet or WWW, based on the geographic location of the Internet user requesting the information.

[0032] FIG. 1 represents a general embodiment and can also represent a specific Internet embodiment of the present invention, as described below. With reference to FIG. 1, a system 10 is shown according to a general embodiment of the present invention, wherein an information providing processor (provider processor 12) is coupled for communication to a plurality of recipient processors 14-16 located at mutually different geographic locations with respect to each other, by a communications network 18. The processors may comprise any suitable data processing and communicating device controlled, preferably by a software program, to operate as described below. The communications network may comprise any suitable means which allows the recipient processors and the provider processor to communicate with each other, including, but not limited to, the Internet or WWW, intranet, cable or other hard-wired networks, optical, electromagnetic or other wireless networks, as well as hybrids thereof, or the like.

[0033] The provider processor 12 is capable of providing information from any suitable source (including, but not

limited to an on-line source or a computer readable storage medium such as a hard or floppy disk, random access memory RAM, read only memory ROM, compact disk (CD), other optical storage disk, such as a DVD, or the like), by communicating such information over a communications network 18. In addition, or alternatively, the provider processor 12 may provide information by directing a recipient to a further site on the network 18, for example, by providing the recipient with a site locator, such as a uniform resource locator (URL) for a network site at which the provided information is available. Such information may include, but is not limited to, data, text or image information including software programs, for example, having different market, legal, political, social, ethical or moral implications in different geographic regions. In preferred embodiments of the present invention, access to the information by the recipient processors 14-16 is controlled, based on the geographic location or region of the recipient processors, the provider processor or both.

[0034] Distribution Based On Location Of Recipient

[0035] In accordance with one aspect of the invention, information is accessed or distributed based on the geographic location of the recipient processor (recipient location based system). In such embodiments, the recipient processors comprise online user terminals, including, but not limited to conventional personal computers (PCs), portable communication devices (such as portable telephones, personal digital assistants, or other portable information units), or vehicle-mounted computers connected to a wide area network, such as, but not limited to, the Internet. However, in further embodiments, the recipient processor may comprise other types of processing or computing systems, such as dedicated processor system, set top boxes, mainframe systems or workstations.

[0036] An example recipient-location based system is shown in FIG. 2. In the FIG. 2 example, each recipient processor 14-16 operates with an associated means 20-22 for providing a position signal. Various embodiments of the invention may employ any suitable means which provides a computer readable signal corresponding to the position, or geographic location or region, of the recipient processors, including, but not limited to, devices for generating pre-recorded geographic information, or user-operated input devices operated by a user to input information corresponding to a geographic location or region (for example, a keyboard, touchscreen, microphone, display icons that are selected by positioning a mouse cursor and clicking the mouse, or the like). However, in preferred embodiments, the geographic location information is generated by a means which calculates the location from information received at the location from satellite signals, such as a global positioning system GPS.

[0037] For example, GPS circuitry may be included as part of the circuitry of the recipient processor system or included in a circuit card that may be installed in a recipient processor system. Alternatively, GPS circuitry may be included in a module connectable to the recipient processor system from a location external to the housing containing the recipient processor.

[0038] In a preferred embodiment, the GPS is implemented with circuitry contained in a portable device that can be easily connected and disconnected by a user to a recipient

processor or to a reading device associated with recipient processor. For example, the GPS circuitry may be contained in a plug-in connector such as a dongle, an electronically readable card, an electronically readable token or the like. In such embodiments, the recipient processor includes a suitable receptacle, such as a serial or parallel port for connecting to a plug-in module or a card or token reader for receiving electronic information from a card or token. In another example, the GPS circuitry is contained in a portion of a disc or similar structure shaped to be inserted in a standard disc reading device, such as a floppy disc drive, compact disc drive, optical disc drive, magneto-optical disc drive or the like, wherein other portions of the disc structure define computer readable media containing programs and/or data for controlling the recipient processor to carry out functions described herein.

[0039] Geographic location information obtained from the GPS, or from other means for providing a position signal, is used to determine whether or not the processor requesting the information is within a restricted (or limited) or non-restricted region. This determination may be made by any suitable procedure, including, but not limited to, comparing the geographic information provided by the recipient processor and positioning system with a list of non-restricted or non-limited (or restricted) geographic locations or regions. Thus, according to some embodiments, information may be provided or not provided (that is, access to the information may be allowed or denied) dependent on the geographic information provided by the recipient processor, such that, if a recipient processor provides geographic information corresponding to a restricted geographic location or region, then the provider processor will be controlled to not provide selective information to the recipient processor. On the other hand, if a recipient processor provides geographic information corresponding to a non-restricted geographic location or region, then the provider processor is controlled to provide the selective information to the recipient computer.

[0040] In further embodiments, a set of rules may be implemented, which depend upon the geographic information (and, thus, the geographic location or region of the recipient processor), such that various restrictions or limitations may be implemented for various geographic locations or regions. Thus, if a recipient processor provides geographic information corresponding to a first geographic location or region, then the provider processor may be controlled to not provide selective information to the recipient processor, unless further requirements are met. Other geographic locations or regions may be associated with similar or other requirements, limitations or restrictions to the access of information from the provider processor.

[0041] While embodiments of the invention may be applicable in a variety of network contexts, in which a network of processors in mutually different geographic locations are coupled through a communications network to a provider processor, preferred embodiments relate to Internet or WWW contexts, in which a provider computer and a plurality of user computers are coupled for communication, through the Internet.

[0042] For example, FIG. 1 may be considered a generalized representation of an Internet or WWW embodiment, wherein the provider server 12 comprises an Internet product or service provider computer or server (hereinafter

referred to as the provider server) coupled for communication, through the Internet 18, to a plurality of network-enabled user devices (such as those described above as recipient processors). The plurality of user devices includes a first user device 14 at a location within a first geographic region X and a second user device 15 at a location within a second geographic region Y, remote from the first region X. Any suitable number of user devices at mutually different geographic locations and/or regions may be connected through the Internet 18, as represented by the Nth user device 22. The user devices may be coupled in communication with the provider server 12 simultaneously or during mutually different periods of time. As described above, the user devices 14-16 and provider device (or server) 12 may each comprise any suitable computer or processor device having means for interfacing with and communicating on a communications network and for operating, preferably under the control of software programs, in the manner described below. Such computers and communication interfacing are well known in the art and are not described in further detail herein for purposes of simplifying the present disclosure.

[0043] In the FIG. 2 embodiment, each user device 14-16 is operatively coupled to an associated means 20-22 for providing a position signal to its associated user computer, indicative of the location or region in which the means is located. As discussed above, in some embodiments, such means may include a user input device associated with a given user device 14-16 (including, but not limited to a keyboard, touch-screen, microphone, display icons that are selected by positioning a mouse cursor and clicking the mouse, or the like) which is operated by the user to input information associated with the user's location or region. For example, such information might include, but is not limited to, the user's zip code, street address, city, state, country, or the like. Alternatively, the means for providing position information may comprise a machine-readable storage media (including, but not limited to, a hard disk, floppy disk, optical or magneto-optical disk, or the like) on which position information is pre-stored and selectively retrieved by or provided to its associated user device. Thus, for example, software associated with the user device or the provider device may operate to provide a prompt to the user to enter position information through the user input device or provide a command to the user's device to retrieve such information from its pre-stored location, as needed.

[0044] However, in preferred embodiments, the means 20-22 associated with each user device 14-16, for providing position information to its associated user device, comprises a means which is capable of generating position information from signals and/or information obtained by the means in its location environment, including, but not limited to satellite signals received in its location environment. In preferred embodiments, each position information providing means comprises a satellite-signal positioning system, for example, a Global Positioning System GPS 20-22. More specifically, each positioning system 20-22 includes a receiver which receives satellite signals from one or more satellites 24 in orbit about the Earth and processes information derived from those signals to produce further information regarding the geographic location of the positioning system.

[0045] Therefore, the positioning system 20 produces information regarding its geographic location. Similarly, the positioning system 22 produces information regarding its

geographic location, which is different than that of positioning system 20. In accordance with modem GPS technology, such geographic information may, for example, correspond to a pre-established global coordinate system such as, but not limited to, Latitude and Longitude (Lat/Long), Universal Transverse Mercator (UTM), Ordinance Survey of Great Britain (OSGB), Universal Polar Stereographic (UPS), Thomas Brother's Page and GridTm, Trimble Atlas™, or the like.

[0046] In preferred embodiments, the positioning systems 20-22 are coupled in close proximity to their respective associated user device 14-16 (or at least to a video monitor coupled to the associated computer), such that each positioning system and its respective associated user device (or computer monitor) are located in the same geographic region. Thus, in FIG. 2, the positioning system 20 is at a location within the same geographic region X as a user device 14. Similarly, the positioning system 21 is at a location within the same geographic region Y as a user device 15.

[0047] In preferred embodiments, the positioning systems are internal positioning systems, in that they are incorporated within the same housing that also contains their respective associated computer, as shown with respect to positioning system 20 and user device 14. In other preferred embodiments, the positioning systems are located in a housing external to the associated user's computer (or device) housing, but still within the proximity of the associated computer (or device) housing (or display monitor), as shown with respect to positioning system 21 and user device 15. Thus, a user device 15 located within an enclosed area, such as inside of a building or structure through which satellite signals may be difficult to receive, may be coupled to a satellite positioning system device (GPS device) 21 located in an external housing. In this manner, the external housing may be located in a convenient location suitably near the associated user device, but also suitable for receiving satellite signal transmissions, for example, near or outside of a window of the office in which the user's computer (or other user device) is located, or on the roof of the building in which the user's computer (or other user device) is located, or other signal-receiving locations within a suitable vicinity of the associated computer (or other user device). The external positioning system device 21 may be coupled to its associated user device 15 by any suitable coupling means, including, but not limited to wire, optical, radio frequency RF, electromagnetic or other suitable communication link.

[0048] Further, preferred embodiments may employ one or more computers with internal positioning systems and one or more computers with external positioning systems, as shown in FIG. 2. Because of the close proximity of each positioning system to its associated user device (or display monitor), a given positioning system will produce location information that corresponds to the geographic location of its associated user device (and user), or at least to a geographic location within the same geographic region as its associated user device (and user).

[0049] As described above, the location information produced by each positioning system 20-22 is provided to the user device 14-16 respectively associated with the positioning system that produced the information. Interface hard-

ware and software for coupling positioning systems, such as GPSs, with computers are well known in the art. Moreover, some portable computers are presently being manufactured with internal GPS hardware and software for processing geographic position information relating to the geographic position of the portable computer. Accordingly, technology associated with interfacing a positioning system and a computer for communicating information therebetween and processing, by the computer, of geographic location information is well known in the art and, for purposes of simplifying the present disclosure, is not described in detail herein.

[0050] In one aspect of the FIG. 2 embodiment, the user devices 14-16 are operated under the control of associated user software 26-28, respectively to communicate geographic information to the provider device, such as a provider server 12. The server is operated under the control of associated server software 29 to selectively provide or deny a given user device 14-16 access to a product or service dependent upon the geographic information provided by the given user device. In other configurations of the FIG. 2 embodiment, the user devices 14-16 are controlled by the user software 26-28 to selectively provide or deny access, without the need to communicate geographic information to the provider.

[0051] One embodiment of an operational process is generally shown with respect to the flow chart of FIG. 3. At step 30 in FIG. 3, a user of, for example, the first user device 14, sends a request over the Internet 18 to the server 12, requesting one or more products or services that can be provided over the Internet connection. The request may be in the form of, for example, a request to access an Internet web site, a request to access a link from a web site page, a selection of an item on a menu displayed on a web page, or other forms of requests for content over a network. Example embodiments of such a request are described in further detail below, with respect to FIGS. 4a and 4b.

[0052] In addition, geographic information corresponding to the geographic location and/or region X of the positioning system 20 (and, thus, of the first user device 14) is provided to the first device 14 by the positioning system 20 associated therewith. Such geographic information may include, for example, data corresponding to coordinate values provided by the positioning system, such as GPS generated position values. Alternatively, such geographic information may include data corresponding to the region X, for example, determined by a routine of software 26, from information provided by the positioning system 20. Thus, for example, a software routine may control the user device 14 to determine a region X for example, the region of a particular zip code, city, state, country or other geographically defined region) in which the user device 14 is located from the location information provided by the positioning system 20 and to provide identification data corresponding to that region (such as an identification name or code preassigned for region X).

[0053] In preferred embodiments, however, the geographic information is communicated from the first user device to the server 12 and the determination of the region in which the user device is located is performed at the provider server, under control of a routine of software 29 (as represented by step 32 in FIG. 3). Once the user device's

region (region X) is determined, a routine of software 29 controls the provider server 29 to determine whether or not the region X is a restricted region (step 34). This determination may be made by any suitable routine, including, but not limited to, a comparison of the data (e.g., ID data) for region X with a pre-stored (or on-line) table or list of restricted regions (or a list of non-restricted regions).

[0054] Alternatively, the determination of whether or not the user device is in a restricted region may be made (at the user device 14 or, more preferably, at the provider server 12) from data corresponding to the location information (such as coordinate values) provided by the positioning system 20, without determining the pre-assigned ID name or code for the region X. For example, coordinate values (as opposed to the ID name or code) may be applied in an algorithm or comparison routine to determine whether or not the coordinates are within a restricted region. Thus, in one example embodiment, a routine may determine, by a pre-stored (or on-line) mathematical comparison routine or algorithm, whether or not the coordinate value data is within a particular range corresponding to the range of coordinates of a restricted (or non-restricted) geographic region.

[0055] The path marked "No" from the step 34 in FIG. 3 represents a determination that the region X in which the user device 14 is located is a restricted region. If the region X is determined to be a restricted region, then the provider server 12 is controlled to deny access by the user device 14 to the requested product or service (step 36). In preferred embodiments, the server 12 provides a deny message to the user device 14 as part of step 36.

[0056] On the other hand, if the region X is determined in step 34 to be within a non-restricted region, then the user device 14 may be provided access to the product or service (step 38). In preferred embodiments, if access is allowed (in step 38), the server 12 downloads to the user device 14, software files, programs, data, decode keys, or other information that defines the requested product or service or that are necessary for the user to obtain the requested product or service.

[0057] Accordingly, in the system embodiments of FIGS. 2 and 3, a user device may communicate a request for a product or service, as well as geographic information identifying the location or region of the user device, to a provider of the product or service on a wide area network, such as the Internet or WWW. The provider employs the geographic information to determine whether to allow or deny access to the product or service requested by the user device. In this manner, the provider of a requested product or service on the network may control access to the product or service on the basis of the geographic location of the user making the request. In other embodiments, the software for determining whether the user should be denied or provided access to the requested product or service resides on the user device (or is connected to or read by the user device), such that geographic information need not be communicated over the network from the user's device to the provider device.

[0058] In further preferred embodiments, instead of a simple access/deny-access determination, the provider may provide limited access for one or more geographic regions or may provide various degrees of limited access, depending upon the geographic region of the user device. Thus, for example, a set of rules may be implemented such that the

server 12 in FIG. 2 may be controlled to allow full access to a particular product or service for user devices (such as 14) in a first region (region X), partial access to the product or service for user devices (such as 15) in a second region (region Y) and no access for user devices (such as 16) located outside of regions X and Y. A set of rules may be pre-stored (for example, as part of the program controlling the determination step 34 or as part of another program or file operable with the control program), for implementing various combinations and degrees of limitations, depending upon the geographic location of the requesting user device. Alternatively, a set of rules may be provided to the server 12 from an on-line source, or the like.

[0059] In some embodiments, according to such rules, the provider may require additional user input or other information to provide limited or full access, depending upon the geographic location of the user device. For example, with respect to the above embodiment, the provider server 12 may be controlled to allow access to any user device in the second region (region Y), only if the user also provides further information, such as the user's age, identification information, payment information, acceptance of an agreement, or other information, or only after the user is provided with a warning, disclaimer or other message or information. Preferably, the provider server 12 is controlled by the software 29 to communicate a request for such further information and/or to communicate the warning, disclaimer or other message or data to the user.

[0060] Other information, which is not necessarily received from the user device, may be employed in the determination of whether or not to allow access (full or

[0061] In preferred embodiments in which the determination of whether to provide, deny or limit access to the requested product or service is carried out by the provider server 12, the user device (14-18) communicates time information to the server, for example, as part of or following the request for the product or service. In a preferred Internet example embodiment, the communication of time information is controlled by software residing on the user device, transparent to the user, such that the user need only select a product or service by, for example, clicking on an appropriate location in a web site (or otherwise entering data corresponding to a request), and the user's device will generate and communicate location and time information as part of or in association with the user's request.

[0062] The server 12 may then be controlled to make a determination (step 36 in FIG. 3) of whether or not the time information received from the requesting user device (14-16) is within an expected range, for example, within a preselected time period before the time that the server 12 receives the request (and/or the location information), which can be represented as:

$$(t_1 - t_2) \leq t_1 - t_2$$

[0063] where t_1 is the preselected time period, t_1 is the time at which the request (and/or location information) was received by the server, and t_2 is the time corresponding to the time information received from the requesting user device. Other suitable algorithms or like means may be used to determine whether or not t_2 is acceptable for a given user computer request. A step 40 for testing the acceptability of the time t_2 , can improve the reliability that the location information was not pre-generated and recorded at another

region. Thus, time testing step 40 can provide a greater confidence to the provider that the location information in a given request was generated by a positioning system at the same location (or at least within the same local region) as the requesting user device and at about the same time that the requesting user device is making the request.

[0064] In the FIG. 3 embodiment, the determination of whether or not the time information received from the requesting user device corresponds to an acceptable time (step 40) is carried out following the determination that the requesting user device is within a non-restricted region or, at least, a limited access region (step 34). However, in other embodiments, the acceptable time determination step (step 40) may be carried out before the region restriction determination step (step 34), such that the request is tested for an acceptable time prior to being tested for an acceptable geographic region. In such an embodiment, if the time t_2 is determined to be not acceptable, then access would be denied (step 36). The process would not proceed to the region-restriction determination step (step 34) unless the time t_2 is determined to be acceptable in the time determination step.

[0065] Time information (corresponding to time t_2) which is communicated to the server 12 by the requesting user device (14-16) is preferably derived or generated from information obtained from the satellite (or other) signals received by the positioning system (20-22) associated with the requesting device. Typical modem GPS receivers receive and process time information signals as part of the satellite-signal processing steps carried out to determine geographic location. Because this time information will generally corresponds to the time at which the satellite signals are received and processed by the requesting user device, this time information may be used to provide the time information communicated to the server 12 by the requesting user device (14-16). Alternatively, as described above, the time information may be obtained from other sources, including but not limited to a clock (not shown) located external or internal to the positioning system (20-22) and/or user device (14-16).

[0066] In further preferred embodiments, for purposes of minimizing counterfeit position or time information, the requesting computer (or more preferably, the positioning system) may be controlled to encrypt the time data and the geographic location data before transmission to the server 12. In yet further preferred embodiments, the location and time information provided by the positioning system (20-22) are encrypted together to render it more difficult to determine either one or both items of information without the decryption algorithm or key. In yet further preferred embodiments, the location and time information may be encrypted by the requesting user device (or more preferably, the associated positioning system) according to a key encoding scheme, wherein a common encoding key K1 is used at the user side and a decoding key K2, different from the encoding key K1 issued to the user devices, is used by the server 12 for decoding the user device's communications and obtaining the location and time information therefrom.

[0067] In this manner, a requesting user device communicates location information having (and preferably encrypted with), in effect, a time stamp corresponding generally to the time at which the satellite signals were

received and the location information was generated. In one embodiment, the location and time information may be communicated from the requesting user device as part of the request (as represented in FIG. 4a) or as part of a separate communication (as represented in FIG. 4b). More specifically, FIGS. 4a and 4b represent examples of alternative schemes for carrying out step 30 of FIG. 3. In FIG. 4a, a request packet 42 communicated by the requesting user device to the server 12 includes location and time information, as well as information identifying the product or service requested ("request info") and, optionally, information identifying the user ("user info"). Preferably, at least the location and time information is encrypted. However, in further preferred embodiments, all of the information may be encrypted together to render it more difficult to decode without the decryption key or algorithm.

[0068] In more preferred embodiments, the location and time information are communicated separate from the requested product information ("request info"), as shown in FIG. 4b. In FIG. 4b, the requesting user device first communicates a request for a product or service, as represented by request packet 44. The server 12 may then be controlled to determine whether or not the requested product or service is one which involves geographic restrictions or limitations. If not, the server may be operated to take further steps to provide access to the requested product or service. However, if the requested product or service is one which does involve geographic restrictions or limitations, then the server may be controlled to communicate a query 46 to the requesting user device, in response to which the requesting user device may then communicate location and time information (represented by packet 48).

[0069] In further preferred embodiments, the user device 14-16 is controlled by software 26-28 to periodically (or otherwise successively) communicate location and/or time information generated by the associated positioning system 20-22 during a communication interchange between the provider server 12 and the user device. As a result, the provider server is provided with multiple location and/or time information packets over the course of a communication interchange, to continue to monitor the user device's location (or region) and reported time, thus, to allow the provider server a greater confidence that the user device is located at the location or region that corresponds to the location information during the time of the communication interchange. While, in the above embodiments, the user devices may be controlled to automatically communicate the periodic (or successive) location and/or time information, in a further embodiment, the server computer 12 may be controlled by software 29 to periodically (or otherwise successively) communicate queries or prompts to the user devices 14-16 during a communications interchange, requesting that the user communicate location and/or time information. The user device may then be controlled by its associated software to respond to each query by communicating location and/or time information to the provider server. In yet further embodiments, the user device may be controlled by software or hardware resident in or with the user device to render the determination of whether or not to continue to provide access of the content to the user, thus, without requiring the location and time information to be communicated over the network.

[0070] In one example embodiment, the user device may be controlled to provide location and/or time information periodically or successively while the requested content is being communicated to the user device in, what appears to the user as, a continuous stream. Thus, in periodic or successive intervals during the reception of a stream of content, the user device may be controlled to provide location and/or time information. If, at any time during the stream of content, the location and/or time information provided by the user device does not correspond to an expected location or time, as described above, then user access to the stream of content may be thereafter denied or cut-off. The denial of access may be controlled by the server, for example, by stopping the streaming of content. Alternatively, the denial of access may be controlled by the user device, for example, by inhibiting processing or reception of the streamed content or by exiting the web site associated with the content server. In the above embodiments, the stream of content may comprise, for example, a lengthy content file, such as a digital movie file, music file, graphics file, electronic book, computer game, or the like.

[0071] The flow charts of FIGS. 5 and 6 show example processes carried out by the requesting user device (14-16) and the server 12, respectively, under the control of the software (26-28) and 29, respectively. The flow chart of FIG. 5 represents an example embodiment of a process carried out by the requesting user device, in accordance with the scheme of FIG. 4b.

[0072] Initially, the requesting user device communicates a request (step 50) and then awaits a reply (steps 52 and 54). Preferably, if a reply is not received within a predetermined time from the request step 50, a determination is made (in step 54) to terminate the process as a failed attempt. If a reply is received within the allotted time, then a determination is made as to whether or not the reply is a query for location information and/or time information (step 56). If not, the requesting user device prepares for receiving the requested product or service (step 58). However, if the reply is a query for location and/or time information, then the requesting user device is controlled to communicate location and/or time information (step 60) and awaits a reply (steps 62 and 64). Such location and/or time information may be encrypted prior to communication, as part of step 60.

[0073] Preferably, if a reply is not received within a predetermined time from the send step 60, a determination is made (in step 64) to terminate the process as a failed attempt. If a reply is received within the allotted time, then a determination is made as to whether or not the reply is a denial message (step 66) and, if so, the user device may be controlled to display a "denied access" message to the user and the procedure may be terminated. If, on the other hand, the reply is an acceptance message or the requested product or service, then the requesting user device prepares for receiving the requested product or service (step 58).

[0074] The flow chart in FIG. 6 represents an example embodiment of a process carried out by the server 12, upon receiving a request for a product or service. In the FIG. 6 embodiment, the server receives a request from a user device (step 70). The server 12 is then controlled to determine whether or not the requested product or service is one which is limited or restricted geographically (step 72). This may be accomplished, for example, by comparing identification

information for the requested product or service with a pre-stored (or on-line) table or list of products or services which have geographic limitations or restrictions (or which are free of such limitations or restrictions).

[0075] If the requested product or service is not limited or restricted by the geographic location of the requester, then from step 72, the process proceeds to prepare for sending the requested product or service (step 74). If, on the other hand, the requested product or service is one which is geographically limited or restricted, then the server 12 is controlled to send one or more queries, requesting location and/or time information (step 76) and then await receipt of such information (steps 78 and 80). Preferably, if a reply is not received within a predetermined time from the send step 76, a determination is made (in step 80) to terminate the process as a failed attempt. If a reply is received within the allotted time, then, at least in some embodiments, the region in which the user device resides is determined (step 82) and the thus-determined region is compared with a table or list of non-restricted (or restricted or limited) regions (step 84) to determine whether the requesting user device is within a restricted, limited or non-restricted access region. Alternative embodiments may determine this information from the location information, instead of first determining the region to which the location information corresponds. If the location and/or time information was encrypted prior to communication from the user device, then step 82 would also involve a step of decoding the encoded information prior to determining the geographic region associated with the information.

[0076] If the server determines that the requesting user device is within a non-restricted region, then the server prepares to send the requested product or service (step 74). Otherwise, the server sends a deny message to the requesting user device and terminates the process (step 86).

[0077] While, the processes represented in FIGS. 5 and 6 are example embodiments for carrying out various aspects of the present invention, other processes which involve the communication over the Internet (or other communications network) of location information obtained from positioning system (such as a GPS) and which control, limit or restrict access to products or services based on such location information, may be within the scope of further embodiments of the present invention.

[0078] Furthermore, it is noted that determinations, such as whether or not the requested product or service is controlled (step 72), whether or not the user device is in a restricted region (step 82 and/or 84) or the degree of restriction or additional information needed based on the user's geographic location (step 74) are primarily described above as being performed by the server 12. This may be preferred for purposes of minimizing fraudulent requests. However, such systems and processes require the communication of the recipient (or user) device's location over the network, which may be problematic if the user's location is considered to be sensitive or private information.

[0079] Other embodiments avoid the need to communicate location information over the network, for example, by employing the recipient (or user) device 14-16 and software (26-28) to perform some or all of these determinations. The recipient (or user) device may also be controlled by its associated software perform the time comparison functions

(step 80). Thus, for example, the user device (or information receiver processor) may operate with software that effectively locks the user device (information receiver) out or otherwise disables or limits the user device's ability to receive requested information, products or services, or disables or limits the ability to process received information, products or services into a user perceptible or usable form, in the event that the user device (information receiver) is in a geographic region for which access to such information, products or services is restricted or limited, or is not in a location that corresponds to a predefined (unrestricted) or expected geographic region.

[0080] In one example embodiment, a server that receives a request for a product or service from a recipient (user) device may be programmed to send a prompt to the recipient device to effect the geographic control functions. For example, upon receiving a request for a product or service from a recipient device (step 70 in FIG. 6), the server processor first determines whether the requested product or service is controlled (step 72 in FIG. 6). If not, then the recipient device is provided access to the product or service. However, if the requested product or service is controlled, then the server computer communicates a prompt or command to the recipient device to perform the remaining steps of the process. The server processor may also provide the recipient device with data corresponding to one or more geographic location, which may be, for example restricted, limited access or free access locations. Alternatively, the prompt or command and/or the data corresponding to one or more geographic location may be included as part of the content of the product or service being requested.

[0081] The recipient device may, thus, be controlled by suitable software, firmware or the like residing on the recipient device (or otherwise accessible by the device) to, for example, selectively deny, limit or allow access to predefined information on the network, display warning or other messages, or enable or disable processing or receiving circuitry or routines necessary to receive or effectively use the predefined information on the network, without requiring the transmission of location information from the recipient device.

[0082] In another example embodiment, a server that receives a request for a product or service from a recipient device may be programmed to send the content (product or service) in an encrypted format, wherein the decryption key or algorithm includes or uses the location information corresponding to, for example, a free access region, or the expected location of the recipient device. Many forms of encryption are commonly used for electronic transmissions of content, including Internet communications. Typical encryption schemes employ an algorithm and/or a key for decrypting the encrypted content. Such algorithms and keys typically include or are composed of values, numbers, parameters, or the like.

[0083] In accordance with one embodiment of the present invention, data corresponding to the geographic location of the recipient (user) processor is used as, for example, one or more of the values, numbers or parameter of the decryption key and/or algorithm. Time data, as described above, may also be used in the decryption key and/or algorithm. Yet other data, such as identification information, including user identification and/or user device identification information,

may be used in conjunction with the location data or with the location and time data to provide values, numbers or parameters of the decryption key or algorithm. Thus, a recipient (user) processor that is provided access to (receives) encrypted content over the network (for example, Internet), will query its associated positioning system for geographic location information (and, in some embodiments, time information and identification information) and will use such information as the decryption key (or as part of the decryption key) or in the algorithm required for decrypting the content. In yet other embodiments, the location information (in some embodiments, location information in conjunction with time information and/or identification information) may be used as part of an address or may be used to derive an address from a look-up table, address algorithm or the like, where the address corresponds to a memory location, network location or the like, at which the recipient processor may obtain a decryption key pre-stored or generated at the address location.

[0084] FIG. 7 is a generalized block diagram of a decryption module system in accordance with one embodiment of the present invention. A respective decryption module system may be coupled to, implemented by or part of each respective recipient processor 14-16 in FIG. 2. In the FIG. 7 diagram, the module system includes a decryption module 90 that comprises a hardware, firmware, software or hybrid decryption system for performing decryption operations in accordance with any suitable decryption technique. Various encryption/decryption techniques applicable to the present invention are well known in the art, including, but not limited to public key algorithm (RSA), private key, hybrid, or other suitable techniques.

[0085] The decryption module 90 is coupled to obtain geographic location information from a source of location information 92 (for example, one of the positioning systems 20-22 in FIG. 2), such as a GPS. Time information may also be provided by the source 92 or other suitable source, as described above. The decryption module 90 may also be coupled to obtain additional data for use in a decryption key or algorithm. Such additional data may be obtained from any suitable source 94, including, but not limited to a user input device, a card reading device, a memory device containing pre-stored data, an on-line connection, a processor routine which derives codes, serial numbers or other data from components resident on the user's device, or the like. In one embodiment, such additional data comprises an identification code issued or assigned to the user, where the identification code is preferably unique with respect to identification codes issued to other users. Such codes may be issued or otherwise assigned to authorized users (or subscribers) by, for example, the content provider at some time before content communication transactions are carried out by the users.

[0086] The decryption module system, comprising the module 90, source 92 and, in some embodiments, source 94 may be implemented in hardware, software, firmware or combinations thereof for operation with its associated recipient processor. The module 90 and one or both sources 92 and 94 may be implemented as separate units connected together or, more preferably, as a single unit within a common housing or package that may be readily connectable to its associated recipient processor. In one preferred embodiment, a housing or package containing the module 90 and

one or both sources 92 and 94 also includes a connector for connecting to a standard serial, parallel, RSA or other port on the recipient processor, such that the module system may be easily connected to or disconnected from a suitable recipient processor by a user. For example, the module system may be housed or packaged in a dongle device as described above, a disc or other structure configured to fit within a standard disc drive as described above, or other suitable housing or packaging connectable to the recipient processor through standard or nonstandard ports on the recipient processor, using one or more wired or optical, electromagnetic, or other wireless connections.

[0087] In operation, the decryption module 90 receives encrypted content as input 96 from, for example, an Internet connection. In one embodiment, the module 90 is coupled directly to an Internet connection. In more preferred embodiments, the recipient processor has an Internet connection for receiving the encrypted content and passes the received encrypted content to the input 96 of the decryption module 90.

[0088] In addition, the decryption module 90 obtains geographic location information from system 92 and any other data that may be used in the decryption process, for example, time data from system 92 or other suitable time source, and/or identification data from source 94. The decryption module 90 employs the geographic location information, time information and/or identification information in the decryption process to produce a decrypted content signal as the module output 98.

[0089] FIGS. 8 and 9 are generalized flow chart diagrams of processes carried out by a content provider processor and a recipient (or user) processor in accordance with an example embodiment of the above-described decryption system. It will be understood, however, that other processes for performing the general encryption/decryption aspects described herein (using geographic information or combinations of geographic, time and identification or other information) may also be employed without departing from the present invention. FIG. 8 represents an example process carried out by a recipient processor, while FIG. 9 represents an example process carried out by the content provider processor, as part of the same content communication transaction.

[0090] In one embodiment of the process of FIGS. 8 and 9, each authorized user preregisters with the content provider and is provided a user code (preferably unique to the user). The code may be an alphanumeric string, symbol, icon or the like which may later be entered or selected by the user with a user input device. Alternatively, the code may be recorded on a machine readable card, token or other device to be carried by the authorized user or recorded in a memory device (including, but not limited to hard, floppy, optical or magneto-optical disc, tape, firmware or dongle devices) associated with the user's communication device (computer, set top box, dedicated processor system, PDA, mobile telephone, or the like). In yet further embodiments, the code may be derived from an on-line connection, or by a processor routine which derives pre-recorded codes, serial numbers or other data from components (including, but not limited to, micro-processors, disc drives, operating systems, or the like) resident on or connected to the user's device.

[0091] As part of the registration process, the user's geographic location is obtained by the provider, and may be

verified by any suitable process, including, but not limited to looking up the user in a telephone directory, requiring the user to submit verifying data and/or payment information such as credit card data, or the like. The provider may then form a table or other suitable mechanism for associating user codes with corresponding user geographic locations, such that the provider will be able to associate each authorized user with an expected (and, preferably, pre-verified) geographic location. For example, a look-up table scheme may be employed in which user codes are associated on a one-to-one basis with data corresponding to an expected user location or with an address or pointer to a memory location at which the expected user location is stored. The user code itself may form an address or a portion of an address at which data corresponding to an expected user location is stored. In further embodiments, more than one expected user location may be associated with a given user code, for example, corresponding to multiple locations in which the user is expected to receive content, such as the user's home(s), office(s), other places of business or commercial establishments, locations along an expected travel route, or the like. Thus, in one embodiment, a user may register multiple locations with a content provider. In such an embodiment, the lookup table entry or memory locations associated with a user code noted above may include data corresponding to the multiple geographic locations.

[0092] The content provider may charge fees to each user for registration of a user location and may charge additional fees for each additional or groups of additional registered locations for a given user. Fees charged to a given user may also be based on other factors, such as the number of people or recipient devices likely to be present at the registered location(s) or the number of users simultaneously receiving content at registered location(s), where greater fees are charged for greater numbers of people or users.

[0093] In a further embodiment, the user code is assigned to the user after the user provides geographic information for one or more locations and, preferably, after the content provider verifies the geographic information as noted above. In such an embodiment, the user code may be generated by the content provider to include an encrypted form of the user's registered geographic location(s). Thereafter, during a communication process, the user code may be decrypted (used in an algorithm or otherwise employed) to determine the user's expected location(s).

[0094] Once a user has registered with the content provider and has received or has been assigned a user code, the user may send a request for content, products or services, over the network, for example, the Internet, (100 in FIG. 8) and the provider processor may then receive the request over the network (102 in FIG. 9). In an Internet embodiment, the request may be initiated over the Internet by a user, for example, attempting to access a web page, attempting to access a link on a web page, submitting request or order information, or the like. The user request may include (or be accompanied by) a user code assigned to the user making the request, as described above. In other embodiments described below, the user need not have a pre-assigned user code and the recipient (user) processor requesting the content need not send a user code. The content provider may charge a fee to the user from which a request is received or for which a request is fulfilled. Moreover, the fee charged to a given user to obtain access to a given content or each piece of content

may be dependant upon factors described above, relating to the number of registered locations for the user, the likely number of users or recipient processors at each registered location, the actual number of simultaneous users at the registered location(s), or the like. Thus, a higher fee may be charged to when the number of locations, users or recipient processors is greater, in the above example.

[0095] In embodiments in which a user code is employed, the recipient (user) processor may be programmed to provide the user code as part of or in association with each user's request for content. Alternatively, the recipient processor may be programmed to first determine whether the requested content requires control measures (similar to the determination described above with respect to step 72 in FIG. 6) and, if so, only then provide the user code as part of or in association with the request for the content.

[0096] In yet a further alternative, the recipient processor may communicate the request without the user code. In such an embodiment, the provider processor may be programmed to determine whether the requested content requires control measures (similar to the determination described above with respect to step 72 in FIG. 6). If the requested content does not require control measures, then the access to the content may be provided to the recipient (user) processor (again, similar to steps 72 and 74 in FIG. 6). However, if the requested content requires control measures, then the provider processor issues a query or command to the requesting recipient computer to provide the user code (similar to step 76 in FIG. 6, but querying for user code instead of geographic location). In response, the recipient computer communicates the user code to the provider processor.

[0097] Once the provider processor receives the user code, the provider processor associates an expected location with the user code (104 in FIG. 9). The expected location may be derived by the provider processor, for example, from the above-described table (for example, look-up table) or other suitable mechanism for associating user codes with corresponding expected user locations. The provider processor may then encrypt the content with an encryption algorithm or technique for which the expected user location is part of the decryption key or decryption processes used to decrypt the content, as described above (106 in FIG. 9). In further embodiments, the encryption algorithm or technique may also employ the user code (and user identification or recipient processor identification information) as part of the decryption key or decryption process.

[0098] The encrypted content is communicated to the recipient processor over the network (108 in FIG. 9) and received by the recipient processor (110 in FIG. 8). In other embodiments, the encrypted content may be communicated to the recipient processor through other means, including, but not limited to, mailing or otherwise delivering a computer readable medium on which the encrypted content is stored, broadcasting the encrypted content through satellite or ground based broadcast systems, or the like. The recipient processor also obtains location information and, in some embodiments, other decryption key or algorithm data, for example, as described above with respect to sources 92 and 94 in FIG. 7 (112 in FIG. 8). While step 112 is shown in FIG. 8 as following step 110, other embodiments may obtain (or at least begin the process of obtaining) location information and any other key or algorithm data before or while the encrypted content is received (110 in FIG. 8).

[0099] The recipient processor then attempts to decrypt the encrypted content, using the location information provided by the positioning system 92 and any other key or algorithm data provided by sources 92 and 94 as described above with respect to decryption module 90 in FIG. 7. If the location and other data corresponds to the same data expected by the provider processor (for example, the same data that was previously verified and included in the provider processor's look-up table and/or the appropriate time data as described above), then the decryption algorithm or key employed by the recipient processor should successfully decrypt the encrypted content (114 in FIG. 8) and the decrypted content may then be displayed to the user (116 in FIG. 8). On the other hand, if the location and/or other data obtained from sources 92 and 94 does not correspond to the expected data (indicating, for example, that the recipient processor is not located at the proper location or that time data indicates that the location information may have been pre-recorded), then the decryption algorithm or key used by the recipient processor should not successfully decrypt the encrypted content.

[0100] In embodiments in which time data is used as part of the encryption/decryption technique or scheme, the content may be encrypted in a manner in which the decryption key or algorithm would include or employ a time parameter which must fall within a specified range of time (for example Δt) to successfully decrypt the encrypted content. The range Δt may be a selected time period following the transmission of content from the content provider, within which the provider expects or desires the recipient to receive and/or process and display the content. Thus, if the time data from source 92 or 94 does not correspond to a time within Δt , then the decryption attempt would not be successful.

[0101] Alternatively, the content provider may involve a dynamically changing encryption technique or scheme, for which the decryption algorithm or key changes over time. For example, the time data parameter associated with Δt may change over time. In such an embodiment, the recipient processor may be programmed to perform a plurality of retrievals of time data from source 92 or 94 (periodically or otherwise successively) during the receipt and/or decryption of the content, to continue to successfully decrypt the encrypted content. In one embodiment, the receipt of encrypted content, decryption of encrypted content and successive retrievals of time data may occur substantially simultaneously. In further embodiments, a plurality of retrievals of geographic location information from position system 92 may be performed and used in the dynamically changing decryption algorithm or key, as an alternative or in addition to successive retrievals of time data as described above.

[0102] In one dynamic encryption embodiment, the content encryption technique, scheme, algorithm or key changes a plurality of times during the course of a communication of the requested content, such that the recipient processor must successively change the decryption technique, scheme, algorithm or key at intervals corresponding to the intervals at which the encryption technique, scheme, algorithm or key were changed. In such an embodiment, the recipient processor and content provider processor may be synchronized during an initiation or handshaking procedure, to change encryption and decryption techniques, schemes, algorithms or keys in a synchronized fashion. Alternatively, the recipient

processor may synchronize or otherwise be controlled by data included in the content to change decryption techniques, schemes, algorithms or keys at the appropriate time. In higher security embodiments, the encryption and decryption techniques, schemes, algorithms or keys may be changed at seemingly random intervals.

[0103] In yet further embodiments, time data is used as part of the encryption/decryption technique or scheme as described above, however, without the use of geographic location information. In such embodiments, the content is encrypted in a manner for which the decryption algorithm or key includes or employs the expected time or range of time Δt . The recipient processor obtains current time information from a suitable time source as described above and employs the current time information in an attempt to decrypt the content. If the current time information corresponds to the expected time or range of time Δt , then the recipient processor should be able to decrypt the encrypted content. If the current time information does not correspond to the expected time or range of time Δt , then the recipient processor should not be able to decrypt the encrypted content.

[0104] In embodiments in which the recipient processor (or user device) communicates its location information to the provider processor, the provider processor may maintain a record of the number of recipient processors (user devices) requesting or accessing content at a given time from a location or locations registered for a given user. If the number exceeds a threshold (which could be set at one or more), then the provider processor may assume that one or more recipient processors (or user devices) are unauthorized users and may thereafter inhibit or cut-off all users from the registered location or locations. Thus, if the registered location is a household, the threshold may be set to the number of expected users within the household. If the registered location is a theater, stadium, concert hall or the like, then the threshold may be set to the number of ticket holders.

[0105] In other embodiments, a user code need not be issued or communicated. Instead, the provider need only know in advance the specific (or, in some embodiments, the general) expected location (or general region) of the authorized users and encrypt the content in a manner for which a decryption key or algorithm includes or uses the expected location (or any location within the expected general region) to decrypt the content, as described above. The expected location of authorized users may be determined, for example, during a registration process as described above or other suitable means. In this manner, the content provider may communicate (or allow access to) the encrypted content to any recipient processor from which a request for such content is received or with which a communication channel is otherwise opened. However, unless the recipient processor is located in an expected location (or region) and is, therefore, provided location information from its associated position system 92 for that location or region, the recipient processor will not be able to obtain the appropriate decryption key or algorithm to successfully decrypt the content. The encryption/decryption technique or scheme may also employ other data (such as time data or user code data) from sources 92 and 94, as described above. In addition, the encryption/decryption technique or scheme may dynamically change, as described above. Furthermore, the recipient processor may be controlled to perform multiple location

and/or time retrievals and successful comparisons with expected location and/or time information during reception and/or decryption of the content to allow continued reception or decryption.

[0106] In other embodiments, such as for contexts in which lower content security is tolerable, instead of encrypting the content, the content may be provided with shell or wrapper software or a tag or command for controlling the recipient computer to carry out location-dependent access functions as described above. For example, in response to the receipt of a request from a recipient processor and, in preferred embodiments, a determination that the requested content is controlled (similar to steps 70 and 72 in FIG. 6), the provider processor communicates the requested content, with shell or wrapper software or with a tag or label as described below. In embodiments in which shell or wrapper software is included with the content, the recipient processor is controlled by the shell or wrapper software to perform functions as described above, for example, with respect to obtaining geographic location information for the associated positioning system (for example, GPS), determining whether or not the recipient processor is in a restricted, limited or non-restricted access region and/or applying access or limitation rules based on the location of the recipient processor. In embodiments in which a tag or indicator is included with the content, the tag or label operates to execute the above-described functions of the recipient processor, from software pre-stored on a memory device associated with the recipient processor. In such embodiments, the tag may comprise an execute command or any other form of indicator initiating the pre-stored software routines. In yet further embodiments, a shell, wrapper or tag may be employed in combination with full or partial encryption of the content to increase security.

[0107] In the above embodiments, the shell, wrapper, tag or label may include information corresponding to the expected geographic location of the recipient processor and/or the expected time or time range. The recipient processor may then use the expected location and/or time information to perform a comparison process with current location and/or time information obtained from sources 92 and 94 as described above.

[0108] According to yet other shell/wrapper and tag/label embodiments, in response to the receipt of a request from a recipient processor and, in preferred embodiments, a determination that the requested content is controlled (similar to steps 70 and 72 in FIG. 6), the provider processor communicates a query or request for the recipient computer's location and/or information (similar to step 76 in FIG. 6) and the recipient processor responds with such information (similar to step 60 in FIG. 5). The provider processor then employs the location information in shell or wrapper software or in a tag or label and associates the shell or wrapper, or the tag or label with the content. The content and associated shell/wrapper or tag/label is then communicated to the recipient processor.

[0109] In preferred embodiments, all (or, at least some) further communications from the provider processor to the recipient processor that may occur in the transaction include a shell/wrapper or tag/label. In the context of a typical Internet website experience, a user may receive multiple communications, corresponding to multiple pages of a web-

site or multiple links taken by the user. Thus, each page or link may be considered a separate communication for which a shell, wrapper, tag or label may be employed as described above. Alternatively, each packet or each predefined number of packets communicated over the Internet may be considered a separate communication for which a shell, wrapper, tag or label may be employed as described above. In this manner, with the receipt of each communication (or, at least some of the further communications) from the provider processor, the recipient processor is controlled by the shell or wrapper software (or by pre-stored software initiated by the tag or label) to obtain location information from its associated locating system and compare the location information with that included in the shell/wrapper or tag/label. Further access to the content is controlled (for example, denied, limited or allowed) by the software, based on whether or not the location information from the locating system corresponds to location information included in the shell/wrapper or tag/label. For example, if the location information does not match, then access may be denied (for example, by inhibiting further processing of the content) and/or a warning or other message information may be provided to the recipient processor for display to the user. In this manner, the location information may be employed to establish and maintain, in effect, a directed communication link between the provider processor and the recipient processor located at a location corresponding to the location information in the shell or wrapper, or tag or label.

[0110] In further embodiments, the shell or wrapper, or tag or label, may include location information corresponding to the location of plural recipient processors, such that the content associated with the shell or wrapper, or tag or label, is communicated, in effect, in a directed communication link with plural computers. This directed communication link between the provider processor and the plural recipient processors, thus, comprises a sub-network of the overall wide area network (or Internet). In accordance with such embodiments, the provider processor may communicate directed communications to each recipient processor in a particular sub-network. In addition, the provider processor may direct different communications (or different content) to different sub-networks of recipient processors, by appropriately tagging or labeling (or associating shell or wrapper software with) the content communications.

[0111] Systems or processes, as described above, in which the recipient processor is provided with a positioning system, for example, but not limited to, a GPS, have a wide variety of applications. Some example applications are described herein. However, it will be understood that the invention encompasses many other applications of systems and processes.

[0112] In one example, systems as described above may be employed for communicating content to pre-authorized users or subscribers, for example, in the context of a subscription service for audio or visual entertainment, including, but not limited to, movies, music, video games, electronic books or other software programs or electronic content, over a wide area network, such as the Internet. Thus, in one example, a movie or music distribution company registers users and, as part of the registration process as described above, obtains and verifies the user's geographic location or locations. The user may also be issued a user code as part of the registration process. Thereafter, the

user may access a web site operated by the distribution company and order or request a movie or music piece. For example, the web site would include prompts and/or links to allow a user to enter a request or order for content (movies or music) by, for example, clicking on appropriate links, icons or otherwise entering and communicating request or order data. Control of access to the requested content would be carried out in accordance with any of the above-described embodiments.

[0113] Depending upon the process and system embodiment employed, the user may or may not be prompted (or the user computer may or may not be controlled) to communicate user location information to the content provider, over the network. For example, content distribution may be controlled as described above with respect to FIGS. 5 and 6 and related embodiments, in applications in which communication of the recipient's location over the network is not impractical or otherwise undesirable. Alternatively, or in addition, the user may be prompted (or the user computer may be controlled) to communicate user code information to the content provider, over the network, as described above. Furthermore, the requested content may be encrypted in accordance with the expected user location, expected time information and other variables, as described above and communicated to the user over the Internet in encrypted form. In this manner, content distribution may be controlled as described above with respect to FIGS. 7, 8 and 9 and related embodiments.

[0114] The content provider may charge subscribing users a fee for allowing access to requested content. Such a fee may allow unlimited access for a period of time (for example a day, month, year, etc.) or may be calculated on a per-use basis (wherein the subscriber is charged for each viewing or playing of the content). The content provider may maintain a record of subscriber charges, for example, associating each subscriber's usage charge with the subscribers identification information and/or user code. In one embodiment, the content provider maintains an account record for pre-paid amounts received by subscribers, for example, in a table in which pre-paid amounts are associated with subscriber information, such as user code. In this manner, as part of the request processing carried out by the content provider, the content provider may determine whether the user making the request has enough funds in the corresponding user account to cover the fees for the requested content. If not, the content provider may communicate a message to the user, indicating that further funds are needed and/or requesting the submission of additional funds. The content provider may deduct fees from a user's account to cover charges described above and may add funds to a user's account to cover refunds, discounts or the like.

[0115] In another example embodiment, the content comprises advertisement information associated with a group of one or more stores, restaurants, theaters or other so-called "bricks and mortar" establishments at a particular location or region. As a representative example, a group of establishments may comprise the stores, restaurants and/or theaters or the like, which are all located in a particular shopping area having geographic boundaries, such as a shopping mall, a street or neighborhood of shops, or the like, for example, as shown in FIG. 10.

[0116] In one aspect of the FIG. 10 embodiment, the recipient (user) processor comprises a processor 120

coupled to a wide area network (preferably, the Internet) 18 and to a video display device 122. The display device 122 preferably comprises a large format display, such as a large-screen tube, plasma, or LCD display device or other electronic billboard or electronic sign display device, disposed in a location which is readily viewable to people present in the shopping area. In the illustrated example, the display 122 is located above the entrance to a movie theater and comprises or is part of the marquee of the theater. The illustrated example also shows another recipient processor 124, coupled to another display device 128, for example, located at a theater in another shopping area. In other embodiments, the display devices 122 and 126 may be located in other suitable, preferably readily viewable and highly noticeable, locations in their respective shopping areas. In preferred embodiments, each recipient processor is associated with a respective position system, for example, a GPS, as represented by 126 and 130, respectively.

[0117] In the FIG. 10 example, each recipient processor 120 and 124 is provided content from the content provider processor 12. In embodiments in which geographic control is not employed, the content may be directed to the recipient processors in any suitable manner, including, but not limited to conventional addressing schemes. However, in preferred embodiments, any one of the above processes or systems for controlling the distribution of content based on geographic location may be employed. Thus, according to such processes and systems, the processor 120 is provided access to (or is able to decrypt) first content provided by the content provider 12, based on the location of the processor 120, as determined by the GPS 126, but is denied access to (or is unable to decrypt) second content provided by the content provider 12. On the other hand, processor 124 is provided access to (or is able to decrypt) the second content, based on the location of the processor 124, as determined by the GPS 130, but is unable to access (or decrypt) the first content. In this manner, the provider processor 12 may provide first content to the recipient processor 120, wherein the first content corresponds to advertisement or promotional information relating to the establishments within the same shopping area as the processor 120. Similarly, the provider processor 12 may provide second content to the recipient processor 124, wherein the second content corresponds to advertisement or promotional information relating to establishments within the same shopping area as processor 124.

[0118] In this manner, the display device 122, which is viewable to shoppers or potential shoppers within a first shopping area, will display information, advertisement or promotional material relating to shops, restaurants, theaters or other establishments in the same shopping area. On the other hand, display device 128 will display information relating to the establishments in its respective shopping area. The control of access to the appropriate content for displaying the appropriate information at the respective shopping areas is, therefore, based on the geographic location the respective recipient processors 120 and 124.

[0119] In one preferred embodiment, the first content to which the processor 120 is provided access, produces a display on display device 122 corresponding to the title and time of a theater production or showing (or multiple titles and times for multiple productions or showings) scheduled to take place at the theater 132. In further preferred embodiments, the first content also comprises video clips corre-

sponding to portions or samples of theater productions or showings scheduled to take place at the theater 132. In yet further preferred embodiments, the first content comprises a combination of such video clips and title information. Similarly, the second content to which the processor 124 is provided access, comprises title, time and/or video clips associated with theater productions or showings scheduled to take place in the theater associated with display device 128. The content provider 12 may comprise a computer operated by the owner of a plurality of theaters (or by the owner's agent, contractor or service provider), which provides access to content by each theater, based on the geographic location of the theater. In this manner, the marquees for a plurality of theaters may be controlled remotely from a single provider processor 12, where each theater marquee displays information specific to productions or showings scheduled for that particular theater.

[0120] In a further embodiment of the FIG. 10 example, the first content provided to the recipient processor 120 for display on the display device 122 comprises information, such as promotional or advertisement information for a plurality of different establishments within the same shopping area. Thus, for example, the first content may include advertisement information for a bakery 134 and further advertisement information for a hobby shop 136 located within the same shopping area as the recipient processor 120 and display device 122. Such advertisement information may be communicated to the content provider 12 and stored in advance.

[0121] For example, the owner of each of these establishments may have communicated advertisement information to the provider processor 12, from suitable computers 138 and 140 coupled to the network 18. In such an embodiment, the provider processor operates with an associated memory device on which advertisement or other display content is stored, for communication to the recipient processors for displaying at appropriate times. Alternatively, the content provider may link or connect the recipient processor 120 to the computers 138 and 140 at appropriate times, to allow the recipient processor to obtain the advertisement information directly from the computers 138 and 140.

[0122] The provider processor 12 may operate a web site for allowing establishments and other advertisers to register and communicate advertisements, promotional information or other information to be displayed on one or more of the display devices 122 and 128. The operator of the provider processor or display devices may charge fees to advertisers, based one or more factors, including, the length of the advertisement, the time and date of the display of the advertisement, the number of times that advertisement is displayed, the number of display devices on which the advertisement is displayed or the like.

[0123] The determination of which establishment's advertisement information should be included in the first content provided to the recipient processor 120 and which information should be included in the second content provided to the second processor 124 may be carried out, based on the geographic location of the advertiser. Thus, for example, the advertisement information provided by the bakery and hobby store owners would be associated with geographic information corresponding to the first shopping area in which the recipient processor 120 is located. The advertisers

may provide such information with the advertisement information. For example, the advertiser may communicate this information to the provider processor 12, through a user input device or other means for providing position information as described above, including, but not limited to a GPS device coupled to the advertiser's computer 138 and 140. In this manner, the content provider 12 may control the distribution of advertisement information for a plurality of establishments to a particular recipient processor (or a plurality of particular recipient processors and associated display devices), based on the geographic location of the establishments and the recipient processor. Thus, for example, advertisement information content for a given establishment may be directed to a recipient processor and display device (or a plurality of recipient processor and display devices) closest to the geographic location of the establishment to which the advertisement pertains.

[0124] In addition, each advertiser may modify, add or delete advertisement information, for example, from the advertiser's computer 134 and 136, by communicating suitable instructions to the provider processor 12 (or directly to the recipient processor 120). In preferred embodiments, each advertiser may control the general time at which the advertiser's message will be displayed, for example, by communicating instructions to the provider processor 12 (or directly to the recipient processor 120) from the advertiser's computer 138 or 140. Such instructions may be communicated, for example, through a web site as described above. In such an embodiment, an advertiser may access the web site from the advertiser's computer 138 or 140 and select operations, such as deleting, adding or modifying content (advertisements or other information) to be displayed, and selecting times, dates or display device locations for displaying the content. The web site may include suitable menus, icons, user input fields or the like for performing the above operations or making the above selections. The web site may even allow an advertiser to request a piece of content to be displayed immediately (or as soon as possible) on one or more selected display devices. Thus, for example, the owner of the bakery 134 may access the web site and communicate instructions or information for displaying on the display device 122 an advertisement for fresh, hot muffins, just before or as the baker removes the muffins from the oven. In this manner, pedestrians within view of the display device 122 and, thus, near the bakery, will be shown, for example, steaming-hot muffins and other visual stimulation, as well as information about where to find the bakery, at a time at which the muffins will have been freshly removed from the oven.

[0125] In yet a further embodiment, the establishment's processor 138 or 140 may be programmed to automatically communicate a signal to the provider processor 12 to cause a specified piece of content to be displayed on one or more selected display devices 122 and 128. The automatic communication of the signal to the provider processor may be controlled by an event sensor, such as a timer (where the event is the expiration of a preset time period), a motion or proximity detector for detecting the presence of people or vehicles in an area (such as the shopping area adjacent and within view of a display device 122 or 128), or other sensor or detector. For example, in the above bakery example, a sensor may be provided on the baker's oven (or other equipment), to sense the completion (or near completion) of a baking process, such that a signal is sent to the provider

processor to display an advertisement for the baked product immediately (or as soon as possible). In other embodiments, sensors may be employed to sense other events associated with a product or service offered by an advertising establishment, to control the display of an advertisement for the product or service upon the occurrence of the event. Such events may be associated with the manufacture, production, maturation, inventory or other event or variable associated with a product. In one example embodiment, an establishment's inventory control system (electronic or software operated) may be controlled to cause a signal to be sent to the provider processor for displaying an advertisement for a given product, upon the inventory control system determining that the inventory (or expected inventory) of the given product has exceeded a pre-defined threshold. Alternatively, or in addition, the inventory control system may be controlled to cause a signal to be sent to the provider processor for pulling or stopping an otherwise scheduled display of an advertisement for a given product, upon the inventory control system determining that the inventory (or expected inventory) of the given product as fallen below a predefined threshold.

[0126] In yet a further embodiment of the FIG. 10 example, establishments within a particular shopping area may communicate information, such as advertisement or promotional information, to a plurality of portable recipient processors located in the same shopping area, through the provider processor. For example, pedestrians or vehicles within the particular shopping area may have portable communication devices connected for communication over the Internet. Such portable communication devices may include portable telephones, personal communication devices or vehicle-mounted communication devices with Internet communication capabilities, as is well known in the art and as described above. In preferred embodiments, such portable devices also include a locating system, for example, but not limited to, a GPS, for providing location information corresponding to the geographic location of the portable devices.

[0127] In accordance with one preferred embodiment, users carrying such portable communication devices within (or suitably near) the first shopping area may access information provided by content provider 12 over the network 18, for example, by accessing a web site operated by content provider 12 over the Internet. Content may then be provided to the user, based on the geographic location of the user's portable communication device, in accordance with any of the above-described processes. For example, in accordance with processes as described above with respect to FIGS. 5 and 6, the user may communicate the user's location information to the provider processor. Alternatively, processes and systems in accordance with FIGS. 7-9 may be used to control access of particular content to users in areas associated with the particular content. The provider processor may then control access to information based on the user's location, such that user's located in the first shopping area are provided with information, such as advertisement, promotional or even video clips of theater productions or showings, associated with the stores, restaurants, theaters or other establishments in the first shopping area.

[0128] Thus, similar to the FIG. 10 embodiment, people within the first shopping area (in this case, the users of portable communication devices within the first shopping

area) may be provided access to advertisement or promotional information from establishments such as the bakery 134 or hobby store 136 located in the first shopping area. On the other hand, users of portable communications devices outside of the first shopping area would not be provided access to such content. However, if those users were located in a second shopping area, they may be provided with content associated with business establishments located in the second shopping area.

[0129] In accordance with another preferred embodiment, the provider processor is programmed to keep track of the number of recipient processors (for example, portable communication devices) that are located in each shopping area and accessing the above-noted web site, based on location information received from user processors in connection with the above-described content control processes. Thus, for example, as user's logged onto the web site communicate location information, the web site operator may maintain a count of users accessing the web site from a given region (or each of a plurality given regions). In this manner, the operator of the web site may charge fees to advertisers (such as the bakery 134 or hobby store 136), where the amount of the fees is based on the number of users located in the shopping area and accessing the web site content for that shopping area over a period of time (such as each day, week or month). Alternatively or in addition, the web site owner may use the collected information regarding the number of users and the times at which the users were present in the shopping area and on the web site, to provide advertisers with reports from which statistical information about user behavior may be derived.

[0130] In addition, the provider processor may control the communication of certain content at a particular time, depending upon the number of user's in the area accessing the web site at that particular time. Thus, for example, an advertiser may not want to pay for the display of an ad on the web site, unless a specified minimum number of users are located in the shopping area and are accessing the web site. Accordingly, the provider processor may be controlled to display or otherwise provide access to certain advertisement, promotional or other forms of information on the web site, only upon the provider processor determining that a specified minimum number of recipient processors are located within the defined region and are accessing the web site. In yet further embodiments, the provider processor may be further controlled by a routine which changes that minimum number at different times of the day, days of the week, weeks of the year or other suitable periods. Thus, for example, the minimum number may be greater during expected peak shopping times or during periods in which the advertising fees are higher than other periods.

[0131] Thus, embodiments of the present invention can be utilized to optimize advertising for local or near-local merchants or businessmen. Indeed, the ability to present advertising, promotional or informational content to a user that is pertinent to the user's physical location and/or pertinent to events associated with the manufacturing, production or inventory can be beneficial to both the user and the advertiser.

[0132] In one embodiment, a user accessing a continuous stream of content, such as viewing a movie, show, television program, video game, radio or other transmission, by con-

ventional means or over the Internet or another wide area network, is introduced to advertising before, during or after such. For example, the primary content program, for example, the movie or video game, is segmented into time frames such that breaks occur in the viewing or playing of the primary program. Commercials or advertisements are introduced during each break between segments. The primary content program provides motivation or enticement for the user to access the web site or other communication channel to receive the primary content with the one or more interleaved breaks. However, unlike current advertising modalities, but in accordance with embodiments of the invention, the selection of the commercial, promotional or informational content to include in the interleaved break(s) may be determined, in whole or part, by the physical location of the user. Such embodiments may employ any of the above-described embodiments for controlling content based on the geographic location of the user (recipient processor), to control the communication of commercial or advertisement content to the user (recipient processor) during the interleaved breaks in the primary content.

[0133] In one example, the primary content is selected by the user, for example, employing a web site system and process as described above. In a further example, the primary content is made available and communicated (for example, streamed) from the web site at a pre-defined or scheduled time, for immediate playing (viewing) by any user or recipient device accessing the web site during pre-defined or scheduled the time at which the primary content is communicated (streamed). However, instead of (or in addition to) controlling the user's access to the primary content, this embodiment controls the version or selection of content received by the user (recipient processor) during one or more of the interleaved breaks in the primary content. Thus, users within a first and second shopping areas may each request and/or receive the same primary content, a user in the first shopping area will receive first advertisement, promotional or informational content during one or more interleaved breaks in the primary content, while a user in the second shopping area will receive second advertisement, promotional or informational content during the one or more interleaved breaks in the primary content. The first advertisement, promotional or informational content may pertain to establishments located in the first shopping area, while the second advertisement, promotional or information content pertains to establishments located in the second shopping area.

[0134] In example embodiments, the provider processor maintains a listing or inventory of advertisements and the physical locations to which the advertisements are relevant. For instance, an advertisement for a local bakery 134 in a first shopping area may not be relevant to a person who resides hundreds of miles away from the actual location of that bakery. In contrast, an advertiser, such as Nabisco or Sarah Lee, which has hundreds of bakery stores or distributors throughout the world could be relevant for any user. In some embodiments, at least some of the inventory (advertisements) are associated with a set of criteria by which the advertisement must be presented. For instance, some governing criteria could include one or more time frames (period of time in a day, days in a week, or the like) for presentation of the particular advertisement, the number of presentations within a particular time frame, the geographical restrictions of presentation, and the like. Additionally, the

number of persons viewing a particular content presentation at a particular time in a particularly defined geographic location could be parameters for the choice of the type of advertisement displayed and the cost of providing such advertising exposure.

[0135] Thus, for example, employing embodiments of the present invention, a web site operator may provide a web site on a wide area network, such as the Internet. Users, such as potential shopper's may access the web site over the Internet, using portable communication devices (as described above). While fixed-location computers may also access the web site, additional benefit is available with the use of portable communication devices, in that the web site content will change as the portable communication device is transported from region to region, as described below.

[0136] In one embodiment, the web site provides entertainment content as the primary content, such as, but not limited to movies, video clips, video games, music, or the like, or information of interest to users, such as, but not limited to stock or other investment prices, weather information, news, traffic information or the like. One or more interleaved breaks in the primary content are provided for displaying advertisement, promotional or informational content as described above. The entertainment or information of interest content is intended to draw user's to the web site. In some embodiments, the user's may be charged a fee to access the web site, in accordance with well known processes of obtaining fees from on-line users. However other embodiments may provide free access to users, to entice users to access and stay on the site. In either case, advertisers may be charged fees for displaying advertisements during one or more interleaved breaks in the primary content.

[0137] When a user in a first region, such as a first shopping area, accesses the web site through a portable communication device, the advertisements or commercials to which the user is provided during one or more interleaved breaks are associated with the first region, such as advertisement information or links to advertisement information for at least one, and preferably a plurality, of the stores, restaurants, theaters or other establishments located in or near the first region. On the other hand, when the user transports the portable communication device to a second region, such as a second shopping area, and accesses the web site, the primary content remains the same, but the advertisements or commercials to which the user is provided during one or more interleaved breaks are advertisements or commercials associated with the second region (and not the first region), such as advertisement information or links to advertisement information for at least one, and preferably a plurality, of the stores, restaurants, theaters or other establishments located in or near the second region.

[0138] While examples described above employ a large display device 122 and 128 located in a shopping area (such as part of a theater marquee or other noticeable location) or portable recipient processor devices carried by users in a shopping area, other embodiments may operate in other suitable geographic regions. Examples of other geographic regions in which a large display device 122 and 128 and/or portable user devices may be employed in accordance with embodiments described herein include, but are not limited to, sports stadiums, concert facilities, amusement parks, shopping malls, individual commercial establishments, edu-

cational facilities or campuses, office buildings or business campuses, or the like, where the advertisement, promotional or information content relates to establishments located in or near the facility or campus. In one embodiment, the display devices 122 and 128 comprise the display screens or the like employed to display the primary movie or show being shown at a theater, wherein the movie or show content is communicated to the theater (recipient processor at the theater) employing geographic control, as described above, to associate the content with the respective theater. Thus, content to multiple theaters may be controlled from a provider processor, such that a first content is communicated for display at a first theater based on the location of the first theater and second content is communicated for display at a second theater based on the location of the second theater.

[0139] In a further example embodiment, the large electronic display devices 122 and 128, as well as additional electronic display devices, are located adjacent selected roadside or highway locations (such as near the approach to a highway or freeway off-ramp). In such an embodiment, content communicated to the recipient processors associated with the electronic display devices 122 and 128 is controlled, such that content displayed by device 122 is advertisement, promotional or informational material relating to establishments near the roadside or highway location of the display device 122 (such as establishments accessible from an off-ramp following the display device 122), while content displayed by device 128 is advertisement, promotional or informational material relating to establishments near the roadside or highway location of the display device 128 (such as establishments accessible from an off-ramp following the display device 128).

[0140] Various approaches described herein of communicating geographic information and/or content (including encrypted or un-encrypted embodiments) and controlling the access to content, dependent upon the geographic location, may be employed in accordance with this embodiment of the invention. For example, content associated with a plurality of regions may be provided to all user's that access the web site, but the content may be encrypted, tagged or provided with shell or wrapper software as described above (for example, with respect to FIGS. 8 and 9 and related embodiments), such that only user's located in a first region will be able to access (decrypt, or otherwise process) the content associated with the first region and not the content associated with another region. On the other hand, a user located in the other region would be able to access (decrypt or otherwise process) content associated with that other region and not the content associated with the first region.

[0141] In other embodiments, access may be controlled in accordance with a procedure in which the user communicates its location information to the web site provider, such that the provider may make access determinations (for example as described in accordance with the FIGS. 5 and 6 and related embodiments). For example, to determine which commercial should be presented to the user, the content provider computer (for example, the computer carrying the movie), may receive location information from the user computer, review the advertising inventory, and the criteria by which the commercial must be presented. Based upon the physical location of the user and the criteria of the available commercials in the inventory, the provider computer presents a commercial to the user.

[0142] In some embodiments, further restrictions could be placed upon the choice of the presentation of the commercial by the user. For instance, a user may decide that he only desires to view automobile commercials, or restaurant commercials during a particular program. In these instances, the content provider computer would further restrict the choice of advertisements to the user based upon the user's parameters. User preferences may be obtained in advance, stored by the content provider and retrieved for example, by associating preference information with a user code (where the user code may be communicated from the user to the provider computer, for example, according to procedures as described above). Alternatively, user preference information may be entered by the user, upon beginning a communication transaction on the web site and stored by the provider computer during the transaction, for controlling communications between the provider and user during that transaction.

[0143] It is to be understood that the provider computer need not provide both the primary program (the entertainment or interesting information content) and the commercials or advertisement content. Indeed, in some embodiments, a programming coordinator computer is used to facilitate the joining of the user with the primary programming and separately provides the advertisements from a separate source, or sources. In this instance, the coordinator serves as a single portal through which the commercials can be selected, thereby reducing the number of primary programming facilities that the advertisers are required to contact for distribution of their advertisements. Similar to the content provider computer, the coordinator maintains an inventory of available advertisements with all relevant criteria for displaying and presenting the advertisements. It is to be understood that not only the user, but the content provider or both could be mobile, for example, in a an automobile, plane, boat, etc. In some preferred embodiments, locally applicable advertisements comprise coupons or similar types of sales incentives. For example, once the location of a site visitor or content consumer is ascertained one or more coupons for use in local businesses could be generated.

[0144] As described above, the content provider (or coordinator) may charge fees to advertisers and/or users. In one embodiment, as described above, the fees charged to advertisers is dependent upon the number of users detected by the content provider (or coordinator) that accessed the web site and were located within the particular region of the advertiser (as determined from geographic information communicated from each user to the content provider or coordinator).

[0145] Also as described above, the display of an advertiser's advertisement content may be controlled so as to occur only when a suitable number of on-line users are determined to be within the advertiser's area. In one embodiment, the web site operator may provide on-line access to information regarding the number of users within particular geographic areas at particular times or within certain time periods. In this manner, advertiser may access the web site (for example via computer 138 or 140 in FIG. 10) and determine when are appropriate times (or time periods in which) to display the advertiser's advertisement content. In this manner an advertiser can put in a "buy" order when a certain number of consumers are on-line viewing the content

in a given location at a given time (or time period). The advertiser may place a standing "buy" order by establishing a minimum threshold, such that, when the threshold number of on-line users in a given location at a given time (or time period) is reached the appropriate advertisement is served up in association with the other content to those persons in the proper location.

[0146] Systems or processes examples may be described herein with reference to Internet applications. However, further embodiments employing such systems or processes have a wide variety of useful applications in connection with other communication systems. Consider, for example, satellite communications systems in which an information signal (such as, but not limited to, a television signal) is transmitted from a satellite to a plurality of receiver processors located in multiple geographic regions. According to one embodiment of the present invention, the transmitted information signal will be locked out from (unaccessible to) receiver processors that are in restricted geographic regions or that are not in an acceptable geographic region.

[0147] In one preferred embodiment, the information provider comprises a subscription satellite television signal provider and the recipient or receiver processors comprise satellite television receivers located at user (subscriber) locations. The positioning system (preferably a GPS), as well as the processor and software for performing steps as described above, are located with the user's (or subscriber's) satellite signal receiver or processing electronics. In this manner, the receipt and/or processing (such as, but not limited to, decrypting or decoding) of the television signal may be inhibited or restricted, unless GPS location data corresponds to predefined or expected location.

[0148] The provider may program or store the predefined or expected location in the receiver-side processor and associated memory, for example, when the provider issues the receiver equipment to the user (subscriber) or installs the receiver equipment at the user's (subscriber's) location. Alternatively, the provider may include information in the transmitted signal, representing the expected or predefined location of the receiver-side processor. Such predefined or expected location information (whether pre-programmed, pre-stored or received with the transmitted signal) is fed to the receiver-side processor. In addition, actual location information, such as GPS data from the GPS associated with the user (subscriber), is fed to the receiver-side processor, for example, when receiver is activated (or a particular television channel or program is selected by the user) to receive a content signal. If the actual location information matches the predefined or expected location, then access to the information (television signal) is allowed. Alternatively, or in addition, the content signal may be encoded according to an encoding scheme which can be decoded by a decoding scheme that requires proper GPS data as part of the decoding algorithm or as a decoding key or simply to allow access to the decoding algorithm or key.

[0149] Also while some of the above embodiments are described as employing the software 26 to operate with the user devices, other embodiments may employ positioning systems 20-22 having processing means capable of processing the software 26-28 and performing the functions described above with respect to the user devices or recipient processors 14-16, such that some or all of the location, time

and request generation functions are performed by the systems 20-22. In such embodiments, the provider may issue (lend, lease or sell) and periodically (or otherwise successively) monitor such processing systems to customers (users) and may, thereby better guard against fraudulent use of the equipment.

[0150] Distribution Based On Location Of Provider

[0151] While embodiments described above are primarily concerned with employing user (or recipient) location information to control access to information, other embodiments may employ provider location information to control access to information in a similar manner. In such embodiments, the provider processor 12 is associated with a positioning system (such as a GPS) for providing location information representing the geographic location of the provider. Such information is transmitted over the communications network to the recipient processor(s), for example during a handshaking exchange or in conjunction with the transmission of content information. The recipient processor would, then be controlled, for example, according to processes described above, to determine whether the provider processor location information corresponds to an expected (or pre-defined or pre-stored) location. If not, then the recipient processor may ignore or deny user access to the information. If the provider processor location information does correspond to an expected location, then the recipient process would be controlled to allow processing and/or user access to further information received from the provider. In this manner, provider authentication may be accomplished, using the provider location information (such as GPS data) to verify the authenticity of the provider information.

[0152] In other embodiments, the expected location may be established from the initial handshaking process or the like at the beginning of a communication transaction, whereby further communications between the provider processor and the recipient processor during the transaction may be directed, based on the geographic location information to be accessible to the provider and recipient processors located at the locations specified during the handshaking process. In yet further preferred embodiments, the provider and recipient processors each communicate location information to the other (or the expected location of the other is known in advance by each). In this manner, communications in both directions between the recipient processor and the provider processor may be controlled to be directed to the specific recipient and provider processors located in the expected location. Furthermore, plural recipient processors and/or provider processors may communicate with each other in such a directed fashion, so as to form a sub-network or private network defined by processor locations.

[0153] In addition to providing processor-location dependent sub-networks, further embodiments of systems or processes in which network communications are controlled, dependent on the location of the provider processor include systems or processes for verifying or identifying the source and/or veracity of the content received from the source. For example, in one embodiment, a positioning system as described above (for example, but not limited to, a GPS) is coupled in close proximity to a content provider processor 12 to supply the processor 12 with location information.

[0154] In response to a request for content from a recipient processor, the provider processor 12 is controlled by suitable

software to provide such location information (such as GPS information) as part of or in association with the transmission of content to a recipient processor. The location information may be in the form of a tag or label provided with the requested content. Alternatively, the location information may be communicated as separate information with respect to the requested content.

[0155] The recipient computer is, then, controlled by suitable software to obtain the location information transmitted from the provider processor and determine from the location information whether to provide, deny or otherwise limit access to the content by the user. Access may be denied or limited by denying certain processing steps necessary for the recipient processor to display the content to the user or by modifying the content in some manner, for example, to censor the content. Alternatively, or in addition, the denial or limiting procedure may involve displaying a warning or other message to the user.

[0156] For example, if the geographic location of the provider processor of offensive or otherwise sensitive web sites are known in advance, a recipient processor may be controlled, for example, to deny or limit user access to some or all of the content otherwise available on those web sites, for example, to keep children from accessing such web site content. Also, if content providers are required to tag or label some or all of the content available on their web sites, then tracking of the source of illegal, illegitimate, or other content can be simplified. Thus, one aspect of the invention involves the implementation of a communication standard, in which geographic location information (for example, but not limited to GPS information) corresponding to the location of the source of a communication is included with each communication (for example, at least once in each communication transaction or as part of each data packet) over a network, such as the Internet. Such location information may be used to control access to information as described above, to form directed sub-networks as described above, and/or to verify the authenticity or otherwise identify the source of the communication. The source identification function may be a strong deterrent to unscrupulous network users that may otherwise distribute unauthorized copies of copyrighted materials, pornographic materials, or other content having illegal, immoral, unpopular political or other undesirable qualities. The source identification function would also serve to help deter fraudulent sales, purchase offers, auction bids, by requiring the seller, auctioneer of goods or services, purchaser, auction bidder or the like to include location information with a communication of, for example, a purchase order or offer, or the communication of an offer to sell or auction a product or service.

[0157] Thus, in accordance with one embodiment of the present invention, an on-line auction or sales agent service may accept requests from on-line users to place certain goods or services of the user for sale or auction. To protect a subsequent purchaser of such goods or services, the auction or sales agent would also require the on-line user to submit location information, for example, but not limited to, GPS information as described above. Time information may also be provided by the on-line user and used by the auction or sales agent service to verify the authenticity of the location information, as described above. The auction or sales agent service would then be able to store the location information and/or provide such information to a subsequent purchaser, in the event that the seller attempts to defraud the purchaser, for example, by collecting the purchasers money without sending the purchased goods or services or by

sending defective or otherwise undesirable goods or services. In a similar manner, the auction or sales agent may obtain and record location information and/or time information received from an on-line purchaser, for example, as part of (or in association with) a communication of a purchase request, offer or bid. Such information may then be used to help identify fraudulent purchasers.

[0158] As is readily apparent from the foregoing description, embodiments of the invention relating to the control of distribution of information on a wide area network, dependent on the location of the recipient processor, the location of the provider processor or the location of both the provider and recipient processors, have a wide range of useful applications. In addition to the applications discussed above, other applications include controlling the prohibition or allowance, in whole or in part of professional services to a user based on user location or future anticipated location, including, but not limited to, such services as medical treatment or other medical services (EMR, psychological counseling, chiropractic services), legal services, accounting services, etc. which require the services of a practitioner that is licensed or otherwise certified by a regional authority.

[0159] Other examples include controlling the prohibition or allowance, in whole or in part, of dating, matchmaking, or other social and/or business introductory services to a user, a provider or both based on their respective location(s) or future anticipated location(s), or by authentication of location. For example, transmission of information about someone, such as visual data or data for additional contact, like a physical meeting, might be denied a user until the user's location is verified. Such systems or processes may incorporate a comparison to prior electronic communications component for verification that the person has been consistent and truthful. For example, two persons have been corresponding on an online dating service. One of the persons previously said in E-mail #28 that he was in Seattle. His GPS coordinates for his computers reveal that no message ever came from Seattle. The woman corresponding may not want to physically meet this person until the discrepancy is explained.

[0160] Yet further example embodiments may be employed in systems for controlling the transmission of content, such as sexual material, tobacco or liquor advertising, wagering or gaming data, etc., or services relating thereto ("Adult Content") to a person without requiring any representation of age made by the person because the location is known to be a location where the person could not be unless the person was an adult, e.g., the location corresponds to a bar, a casino, a gentleman's club, an adult book store, etc. Similarly, such systems or processes may prohibit the transmission of content or services based upon the location being a known school, library, church or other place where Adult Content dissemination would be inappropriate because of the potential presence of minors.

[0161] Additional examples include the prohibition or allowance of transmission, in whole or in part, of entertainment, such as movie premiers, limited engagement content, concerts, plays, sporting or other events to a user based on location. This would be a local black-out enabling technology. This would also work for election results availability on election day when polls are closed in one part of the country and open in another (only practical if the First Amendment issues could be resolved).

[0162] Also, while a number of determinations are described above as being accomplished by comparing a

value (product identification, location information, region information, user computer id, user location) to a table or list of such values, other embodiments may employ suitable algorithm-based schemes for rendering the determinations.

[0163] Further embodiments may employ additional features, such as means for the provider computer to compare the location information received from the requesting computer with other location information obtained from the user, such as, but not limited to, billing address information associated with credit card numbers provided by the user, pre-stored address information (for example, stored in storage means 13 or available to the server from other on-line sources, not shown) which is expected to correspond to a particular user, or the like. If the location information does not correspond to the address information, access to the requested product or service may be denied or limited.

[0164] Other uses of location information transmitted by a user computer over the Internet may include, for example, uses associated with detecting stolen or contraband computers. For example, user computers which operate with satellite-signal positioning systems as described above may be programmed to transmit location information to a predetermined address when connected to the Internet such that, in the event the computer is stolen, the computer's location may be tracked. The location information may also be used to track the location of illegal subscribers of Internet connection services.

[0165] A further embodiment of the system and method involving geographic location information obtained from a suitable positioning system as described above (including, but not limited to GPS) relates to correlating or associating image data generated by an imaging device with location information corresponding to the location of the image sensing device. For example, with respect to FIG. 12, an image sensing device 160 (such as a digital camera, video camera, CCD device, CID device or the like) produces a digital signal 162 representative of a sensed image or an object 164. Digital image data from the device 160 is provided to a processor 166. A positioning system 168 as described above (for example, but not limited to, GPS) within the proximity of the imaging device 160 is also coupled to the processor, to provide location information to the processor.

[0166] Under the control of the processor, the positioning system 168 provides location information corresponding to an image recorded by the device 160. For example, the processor may retrieve location information from the positioning system, in response to (or at the time that) the imaging device is operated to record an image. The processor 166 may be controlled to store location information with the associated image information (or otherwise correlated with the associated image information) at a local memory device 170 (such as, but not limited to, a hard, floppy, optical, magneto-optical disc or other suitable storage device).

[0167] For example, the image data for an image A may be stored in a file 172 in memory 170. The same file or an associated file may contain location information corresponding to the image A. Similarly, an image B may be stored in a second file 174 in memory 170, with (or in association with another file containing) location data corresponding to image B. In a further embodiment, the processor 166 may be coupled through a network (such as the Internet) to a second processor 176 having an associated memory device 178,

such that the processor 166 may communicate image and/or location information to the second processor 176 for storage on the memory device 178.

[0168] In the above example, the location information corresponds to the location of the imaging device 160 (by virtue of the positioning system 168 being located in the vicinity of the imaging device 160, preferably within the same housing). In other embodiments, the location information may be more closely correlated to the location of the object 164 being imaged. This may be accomplished by determining the focal point of the imaging device at the time the image is made (for example, by employing position sensing or focus-finding electronics included in the imaging device as part of an automatic focusing system). Alternatively, or in addition, other means for determining the location of the object 164 relative to the device 160 and combining that information with the location of the device 160 as determined by the positioning system 168, may be employed. For example, a user input device may be employed for allowing a user to input a measured or estimated distance between the object 164 and the device 160.

[0169] Systems and processes for associating location information with recorded image information may be employed, for example, to make images of crime scene evidence, with electronic recordation of the location of each imaged piece of evidence. Similarly, the system or process may be used for electronic recordation of the location of artifacts by recording image of an archeological site. Images may be made of structures, such as buildings, ships, airships or the like, during manufacture (such as the framework of a building under construction), so as to identify and record the location of beams, pipes, studs or other physical items or structures that will later be sealed within the completed walls of the building, ship or the like. Many other applications of use of such image-location information are also within the scope of the present invention.

[0170] Further improvements of the above-described GPS embodiments may include memory devices associated with the GPS device, to store the last-known position of the GPS device. In this manner, if the GPS signal is not obtainable, the GPS device may then retrieve the pre-recorded location information and use that information as location information. Preferably, the recorded GPS information is provided with an expiration time, such that the pre-recorded information may only be used as valid position information for a defined period following acquisition or recording of the information.

[0171] The embodiments disclosed herein are to be considered in all respects as illustrative and not restrictive of the invention. The scope of the invention is indicated by the appended claims, rather than the foregoing description. All changes that come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

What is claimed is:

1. A method for controlling the distribution of information from an information provider processor to a plurality of recipient processors on a communications network, based on the geographic locations of the recipient processors the method comprising:

associating a respective positioning system with each respective recipient processor;

receiving location information from the positioning system associated with a given recipient processor, the location information corresponding to the general geographic location of the given recipient processor;

determining, from the location information, whether the geographic location of the given recipient processor is within a predefined location or region;

requiring additional information before providing the given recipient processor with access to first information in the event that the given recipient processor is determined to be within the predefined location or region.

2. A method as recited in claim 1, wherein requiring additional information comprises communicating a query to from the provider processor to the given recipient processor for the additional information.

3. A method as recited in claim 1, wherein requiring additional information comprises user age information.

4. A method as recited in claim 1, wherein the additional information comprises payment information.

5. A method as recited in claim 1, wherein the additional information comprises a user indication that a waiver, license or disclaimer is accepted.

6. A method as recited in claim 1, wherein the additional information comprises current time information.

7. A method as recited in claim 1, wherein the additional information comprises user identification information.

8. A method as recited in claim 1, wherein receiving location information comprises receiving location information over the network by the provider processor and determining comprises determining, by the provider processor, whether the geographic location of the given recipient processor is within a predefined location or region.

9. A method as recited in claim 1, wherein receiving location information comprises receiving location information by the given recipient processor and determining comprises determining, by the given recipient processor, whether the geographic location of the given recipient processor is within a predefined location or region.

10. A method for controlling the distribution of displayable content to a plurality of recipient processors, including first and second recipient processors, on a communications network, the method comprising:

associating a respective positioning system with each respective recipient processor;

associating a large format, electronic display device with each respective recipient processor;

locating each display device in a location viewable from an area in which a large number of people are expected to inhabit or pass;

communicating first displayable content over the network to the first recipient processor and communicating second displayable content over the network to the second recipient processor, the first displayable content corresponding to business establishments in the vicinity of the display device associated with the first recipient processor and the second displayable content corresponding to business establishments in the vicinity

of the display device associated with the second recipient processor, wherein the first displayable content is different from the second displayable content.

11. A method as recited in claim 10, wherein communicating first and second displayable content comprises:

receiving location information from the positioning system associated with the first recipient processor, the location information corresponding to the general geographic location of the first recipient processor;

receiving location information from the positioning system associated with the second recipient processor, the location information corresponding to the general geographic location of the second recipient processor;

associating the geographic location of the first recipient processor with first content and the geographic location of the second processor with second content; and

communicating the associated first and second content to the respective first and second recipient processors.

12. A method as recited in claim 10, wherein locating each display device comprises locating the display device associated with the first recipient processor adjacent a theater entrance and wherein the first displayable content includes information relating to productions or shows scheduled for a showing in the theater.

13. A method as recited in claim 12, wherein the first displayable content further includes advertisement information relating to a business establishment near the theater.

14. A method as recited in claim 10, wherein locating each display device comprises locating the display device associated with the first recipient processor adjacent a theater entrance and wherein the first displayable content includes a clip of a portion of a production or show scheduled for a showing in the theater.

15. A method as recited in claim 10, wherein locating each display device comprises locating the display device associated with the first recipient processor adjacent a road or highway and wherein the first displayable content includes information relating to business establishments near the road or highway location of the display device associated with the first recipient processor.

16. A method as recited in claim 10, wherein locating each display device comprises locating the display device associated with the first recipient processor adjacent a highway or freeway off-ramp and wherein the first displayable content includes information relating to business establishments accessible from that highway or freeway off-ramp.

17. A method as recited in claim 10, further comprising providing an advertiser interface for allowing advertisers in the vicinity of the area in which the display device associated with the first recipient processor is located to enter or modify content for inclusion in the first displayable content, and allowing advertisers in the vicinity of the area in which the display device associated with the second recipient processor is located to enter or modify content for inclusion in the second displayable content.

18. A method as recited in claim 17, wherein the advertiser interface comprises a web site.

* * * * *

EVIDENCE APPENDIX G
COPY OF LOTTOBOT, HTTP://LOTOBOT.NET

Click Here to Win \$50,000!

LottoBot

Click Here to Win \$50,000!



Click Here to take the Survey

Want to get your personal lottery results by email? Try LottoBot -- It's FREE!

Here's how it works: You enter your lottery ticket numbers and email address(es) and LottoBot checks your ticket numbers with the winning numbers and emails your results right after the draw! LottoBot is great for group players: you can have your groups' results emailed to each person individually! LottoBot sends results for U.S. and Canadian lotteries including Powerball, Big Game, and Lotto 6/49, plus U.K. & Ireland National Lotteries and Australia!

There is no financial obligation to LottoBot ever and you may cancel service whenever you like. Also you will never receive unsolicited email (spam) from using LottoBot. To sign up first go to the Lotto Menu.

Looking for latest/past winning numbers? Check the Archive

Got a pager? LottoBot can page your results to you when you're on the road!



LottoBot Menu
Lotto Results by Email
Jackpot Alerts by Email
Winning Numbers Archive
Message Boards
Cancel or Change Email
Help
LottoBot Raves!
Web Guide
Affiliate Program



LottoBot has 3878 email clients!

Want to play online? Try THE Internet lottery, PLUS Lotto.
PLUS Lotto even has online instant scratch and win games!

Have any systems for picking numbers? If so you can use LottoBot for testing:
You can tell LottoBot to email you when you have picked a winning combination!

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Whole Lotta Lottos!

Here's just *some* of the lotteries that LottoBot currently sends results for ...



Australia : Saturday Lotto, Oz Lotto, Powerball, Keno



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Ireland : Irish Lotto



New Zealand : Lotto, Strike



U.K. : National Lottery, Thunderball

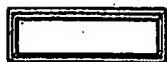


U.S.A. : Big Game, Cash 4 Life, Powerball, Tri-State Megabucks, Wild Card, Arizona Lotto, California Super Lotto, Colorado Lotto, Connecticut Lotto, Delaware Lotto, DC Quick Cash, Florida Lotto, Georgia Lotto, Georgia Big Game, Idaho Fast 5, Illinois Lotto, Illinois Big Game, Indiana Hoosier Lotto, Iowa Daily Cash Game, Kansas Cash, Kentucky Lotto, Louisiana Lotto, Maryland Lotto, Maryland Big Game, Massachusetts Mass Millions, Massachusetts Megabucks, Massachusetts Big Game, Michigan Lotto, Michigan Big Game, Minnesota Gopher 5, Missouri Lotto, Montana Cash, Nebraska Pick 5, New Jersey Lotto, New Mexico Roadrunner Cash, New York Lotto, Ohio Super Lotto, Oregon Megabucks, Pennsylvania Super 6 Lotto, Rhode Island Roll Down, South Dakota Cash, Texas Lotto Texas, Virginia Lotto, Virginia Big Game, Washington Lotto, West Virginia Cash 25, Wisconsin Megabucks, Wisconsin Supercash

Plus many, MANY more! ... And new lottos are being added all the time!

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LottoBot Lotto Menu : U.S.A.



Multi-State : Powerball, Big Game, Rolldown ~~xxx~~, Wild Card

Arizona : The Pick, Fantasy 5, Pick 3
California : SuperLotto Plus, Fantasy 5, Daily 3
Colorado : Lotto, Cash 5
Connecticut : Lotto, Cash 5, Midday Play 4, Play 4, Midday Play 3, Play 3
Delaware : Lotto, Midday Play 4, Play 4, Midday Play 3, Play 3
D.C. : Quick Cash, Hot Five, Midday Pick 4, Pick 4, Midday Pick 3, Pick 3
Florida : Lotto, Fantasy 5, Mega Money, Play 4, Cash 3
Georgia : Lotto, Fantasy 5, Cash 4, Midday Cash 3, Cash 3
Idaho : Fast 5
Illinois : Lotto, Little Lotto, Midday Pick 4, Pick 4, Midday Pick 3, Pick 3
Indiana : Hoosier Lotto, Lucky 5, Daily 4, Daily 3
Iowa : Daily Cash Game, Pick 3
Kansas : Cash, Pick 3
Kentucky : Lotto, Cash 5, Midday Pick 4, Pick 4, Midday Pick 3, Pick 3
Louisiana : Lotto, Cash Quest, Pick 4, Pick 3
Maine : see Tri-State
Maryland : Lotto, Cash In Hand, Midday Pick 4, Pick 4, Midday Pick 3, Pick 3
Massachusetts : Millions, Megabucks, Cash, Numbers
Michigan : Lotto, Rolldown, Keno, Midday Daily 4, Daily 4, Midday Daily 3, Daily 3
Minnesota : Gopher 5, Daily 3
Missouri : Lotto, Show Me 5, Pick 3
Montana : Cash
Nebraska : Pick 5
New Hampshire : see Tri-State
New Jersey : Lotto, Cash 5, Lotzee, Pick 4, Pick 3
New Mexico : Roadrunner Cash
New York : Lotto, Local Lotto, Take 5, Win 4, Numbers, Pick 10
Ohio : Super Lotto Plus ~~xxx~~, Buckeye 5, Pick 4, Pick 3
Oregon : Megabucks
Pennsylvania : Super 6 Lotto, Cash 5, Big 4, Daily 3
Rhode Island : Roll Down, Pick 4
South Dakota : Cash
Texas : Lotto, Cash 5, Million, Pick 3
Tri-State : Megabucks, WinCash, Pick 4, Pick 3
Vermont : see Tri-State
Virginia : Lotto, Midday Cash 5, Cash 5, Midday Pick 4, Pick 4, Midday Pick 3, Pick 3
Washington : Lotto, Quinto, Lucky for Life, Daily 3, Keno
West Virginia : Cash 25, Daily 4, Daily 3
Wisconsin : Megabucks, Supercash, Pick 4, Pick 3

Powerball and Big Game : Please be aware there is only ONE Powerball and only



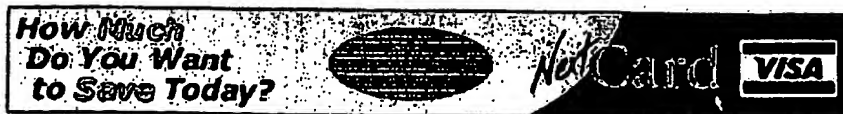
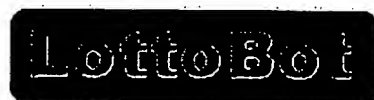
ONE Big Game for the whole U.S. There are no separate Powerball and Big Game draws for each state. This is why there are no Powerball and Big Game links for each state. The Powerball and Big Game links are at the top of the list.



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D.C. : n/a
Florida : Lotto
Georgia : Lotto
Idaho : n/a
Illinois : Lotto
Indiana : Hoosier Lotto
Iowa : n/a
Kansas : Cash
Kentucky : Lotto
Louisiana : Lotto
Maine : see Tri-State
Maryland : Lotto
Massachusetts : Millions, Megabucks
Michigan : Lotto
Minnesota : n/a
Missouri : Lotto
Montana : n/a
Nebraska : n/a
New Hampshire : see Tri-State
New Jersey : Lotto
New Mexico : n/a
New York : Lotto
Ohio : Super Lotto Plus ~~xxx~~
Oregon : Megabucks
Pennsylvania : Super 6 Lotto, Cash 5
Rhode Island : n/a
South Dakota : n/a
Texas : Lotto
Tri-State : Megabucks, WinCash
Vermont : see Tri-State
Virginia : Lotto
Washington : Lotto, Quinto
West Virginia : n/a
Wisconsin : Megabucks

Powerball and Big Game : Please be aware there is only ONE Powerball and only

8

ONE Big Game for the whole U.S. There are no separate Powerball and Big Game draws for each state. This is why there are no Powerball and Big Game links for each state. The Powerball and Big Game links are at the top of the list.



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Florida : Lotto, Fantasy 5, Mega Money, Play 4, Cash 3
Georgia : Lotto, Fantasy 5, Cash 4, Midday Cash 3, Cash 3
Idaho : Fast 5
Illinois : Lotto, Little Lotto, Midday Pick 4, Pick 4, Midday Pick 3, Pick 3
Indiana : Hoosier Lotto, Lucky 5, Daily 4, Daily 3
Iowa : Freeplay Replay, Daily Cash Game, Pick 3
Kansas : Cash, Pick 3
Kentucky : Lotto, Cash 5, Midday Pick 4, Pick 4, Midday Pick 3, Pick 3
Louisiana : Lotto, Cash Quest, Pick 4, Pick 3
Maine : see Tri-State
Maryland : Lotto, Cash In Hand, Keno, Midday Pick 4, Pick 4, Midday Pick 3, Pick 3
Massachusetts : Millions, Megabucks, Cash, Numbers
Michigan : Lotto, Rolldown, Keno, Midday Daily 4, Daily 4, Midday Daily 3, Daily 3
Minnesota : Gopher 5, Daily 3
Missouri : Lotto, Show Me 5, Pick 3
Montana : Cash
Nebraska : Pick 5
New Hampshire : see Tri-State
New Jersey : Lotto, Cash 5, Lotzee, Pick 4, Pick 3
New Mexico : Roadrunner Cash, Mega Match 4
New York : Lotto, Local Lotto, Take 5, Win 4, Numbers, Pick 10
Ohio : Super Lotto, Buckeye 5, Pick 4, Pick 3
Oregon : Megabucks
Pennsylvania : Super 6 Lotto, Cash 5, Big 4, Daily 3
Rhode Island : Roll Down, Pick 4
South Dakota : Cash
Texas : Lotto, Cash 5, Million, Pick 3
Tri-State : Megabucks, WinCash, Pick 4, Pick 3
Vermont : see Tri-State
Virginia : Lotto, Midday Cash 5, Cash 5, Midday Pick 4, Pick 4, Midday Pick 3, Pick 3
Washington : Lotto, Quinto, Lucky for Life, Daily 3, Keno
West Virginia : Cash 25, Daily 4, Daily 3
Wisconsin : Megabucks, Supercash, Pick 4, Pick 3

Powerball and Big Game : Please be aware there is only ONE Powerball and only



ONE Big Game for the whole U.S. There are no separate Powerball and Big Game draws for each state. This is why there are no Powerball and Big Game links for each state. The Powerball and Big Game links are at the top of the list.

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Minnesota : Gopher 5, Daily 3
Missouri : Lotto, Show Me 5, Pick 3
Montana : Cash
Nebraska : Pick 5
New Hampshire : see Tri-State
New Jersey : Lotto, Cash 5, Lotzee, Pick 4, Pick 3
New Mexico : Roadrunner Cash
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Ohio : Super Lotto, Buckeye 5, Pick 4, Pick 3
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West Virginia : Cash 25, Daily 4, Daily 3, Keno
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This form allows you to cancel or change your LottoBot subscription. To cancel your LottoBot subscription please enter your email address below *and* select a lotto, then click the "Submit" button. To change your LottoBot subscription please follow the cancel procedure then make a new submission as you did before by following steps 1 through 4 on the submission entry form.

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please select one



please select one



please select one



please select one

16

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Another reason could be that you made your submission after the email results have been sent. In this case you will begin receiving your results next draw.

Finally, if you made a submission and selected a day other than the actual draw day then you will not receive your results.

If you are not receiving your results and you are sure it is not for any of the above reasons please send an email to help@lottobot.net stating which lotto results you are not receiving. Please include either your LottoBot Confirmation message you received after signing up or a copy of the last email results you received.

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Useful Sites ~~new~~
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Want to suggest a site be added to LottoBot Web Guide?
Please submit site URL(s) for review!

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Yahoo! Site of The Day, June 27 1999
CGO Cable WAVE Information Page, May 14 1999

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"Your website gave me the push to go out and consistently play the same favorite numbers in all the Florida games. 2 short weeks later, (on Christmas!) I received an email from your site stating I had hit all five numbers on Fantasy 5. \$14,000 was a great Christmas gift."
- B.B., Florida, USA

"You guys have my #1 vote for favorite websites. A very satisfied subscriber."
- G.C., Ontario, Canada

"I think your service is great."
- G.L., Canada

"I seemed to miss the numbers when they were published in the paper and I almost never brought them to the store where I could have them checked by the clerk. Now, however, I can look to see if I have won right here in my own home. I would like to thank you once again for this valuable and practical service."
- L.B., Ontario, Canada

"I love the idea of your service!"
- J.F., New York, USA

"I use your service daily and enjoy it very much! Thanks"
- G.B.

"What a great idea! I have signed up for your service."
- J.S., B.C., Canada

**"I want to use LottoBot for California Super Lotto on a regular basis."
- R.R., California, USA**

**"I can't tell you how convenient it is having this service ... Thanks again
for the great service!"
- D.R., Ontario, Canada**

**"As a new subscriber to your service I find it awesome that the lotto
results are emailed right to my computer. It is a great service ... I am
starting to send your address to everyone in my mailing list."
- G.J., Newfoundland, Canada**

**"Now I don't have to buy the newspaper to find out my lottery results.
Every time I buy a ticket I put the numbers in the computer and LottoBot
notifys me."
- AOL member**

**"I like your service ... It is nice to have the numbers instantly after the
draw."
- R.W., Ontario, Canada**

**"It is amazing! How do you get all the numbers from around the globe?
You beat the news channels and papers. Great Job!"
- T.M., New Jersey, USA**

**"Great site I use it all the time. I would be lost with out it."
- J.S., Pennsylvania, USA**

**"Hey guys keep up the good work. It really is a convenience to receive my
lottery results at my personal computer. Keep up the good work!"
- S.F., Maryland, USA**

**"Thank you for the results of lotto. This is great. I will tell my friends
about this service."
- C.C., Illinois, USA**

**"The service is great and I love it, thank you."
- AOL member**

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EVIDENCE APPENDIX H
COPY OF LUCIANO ET AL. U.S. PATENT NO. 6,168,521



US006168521B1

(12) **United States Patent**
Luciano et al.

(10) **Patent No.:** **US 6,168,521 B1**
(45) Date of Patent: **Jan. 2, 2001**

(54) **VIDEO LOTTERY GAME**

(76) **Inventors:** **Robert A. Luciano**, 4665 Lakewood Ct., Reno, NV (US) 89509; **Art Bunce**, P.O. Box 2516, Escondido, CA (US) 92033; **Glenn M. Feldman**, 9855 N. 49th Pl., Paradise Valley, AZ (US) 85253; **George Forman**, 5055 Lucas Valley Rd., Nicasio, CA (US) 94946; **Jerome Levine**, 4741 Arcola Ave., N. Hollywood, CA (US) 91602

(*) **Notice:** Under 35 U.S.C. 154(b), the term of this patent shall be extended for 0 days.

(21) **Appl. No.:** **08/928,297**

(22) **Filed:** **Sep. 12, 1997**

(51) **Int. Cl.⁷** **A63F 13/00**

(52) **U.S. Cl.** **463/18; 463/17; 463/29; 463/42**

(58) **Field of Search** **463/16, 17, 18, 463/29, 42**

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Primary Examiner—Valencia Martin-Wallace

(57) **ABSTRACT**

This invention is directed to an electronic lottery game system utilizing multiple player-activated video terminals that are linked to computers performing centralized game draw and accounting functions. Each player places a wager and selects his lottery draw choices. The system enrolls the player in a future lottery game after the player makes his choices. The system automatically draws the lottery numbers. The result of the selected game is displayed at the player's terminal in such a manner as to provide the excitement of a real time game.

22 Claims, 8 Drawing Sheets

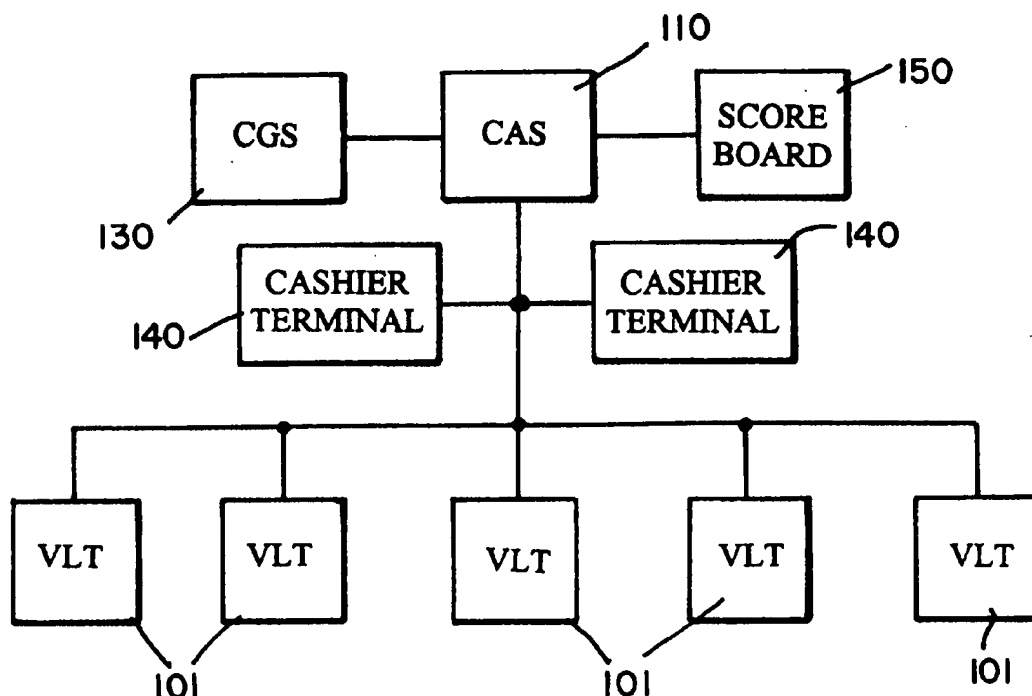


Fig. 1.

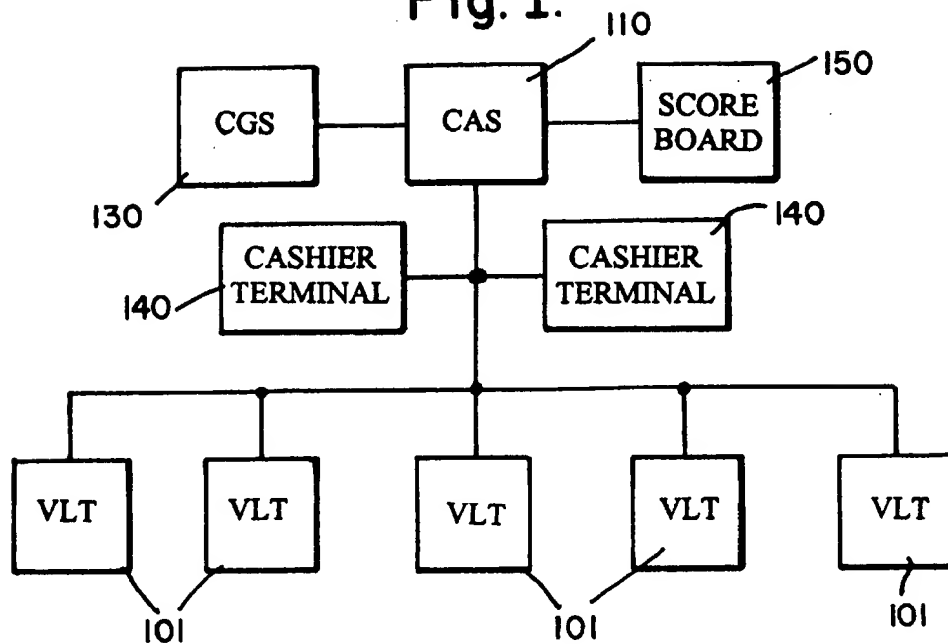


Fig. 2.

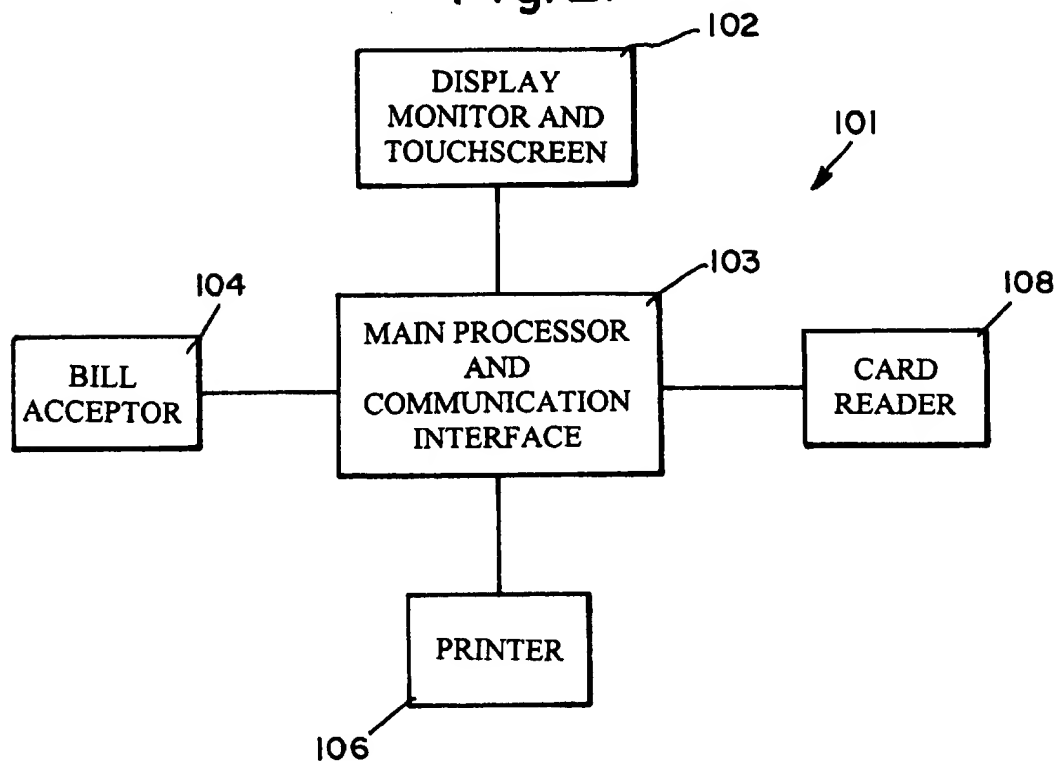


Fig. 3.

41

36

31

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10

WAGER

CREDIT

SELECT 2 TO 10 SPOTS

37

38

39

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
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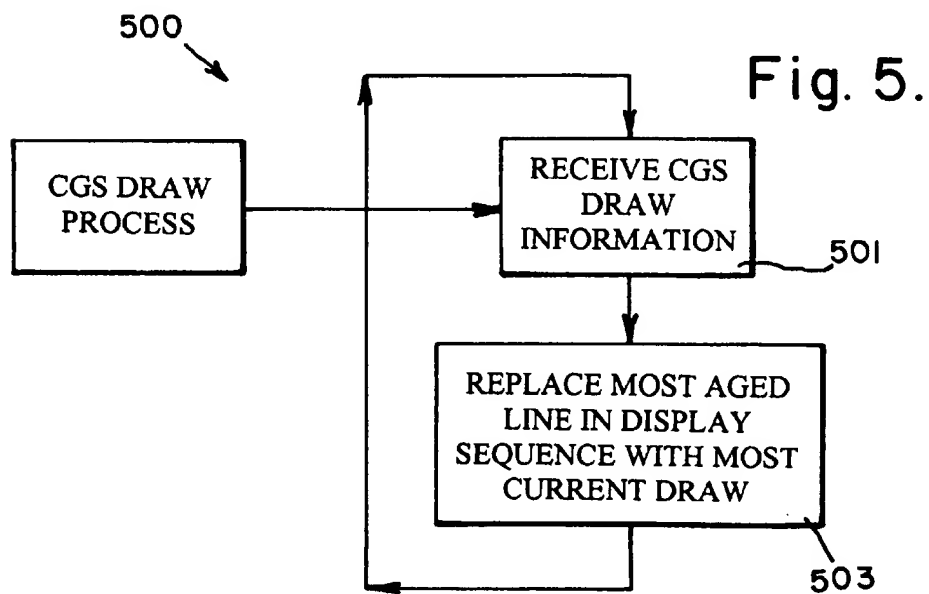
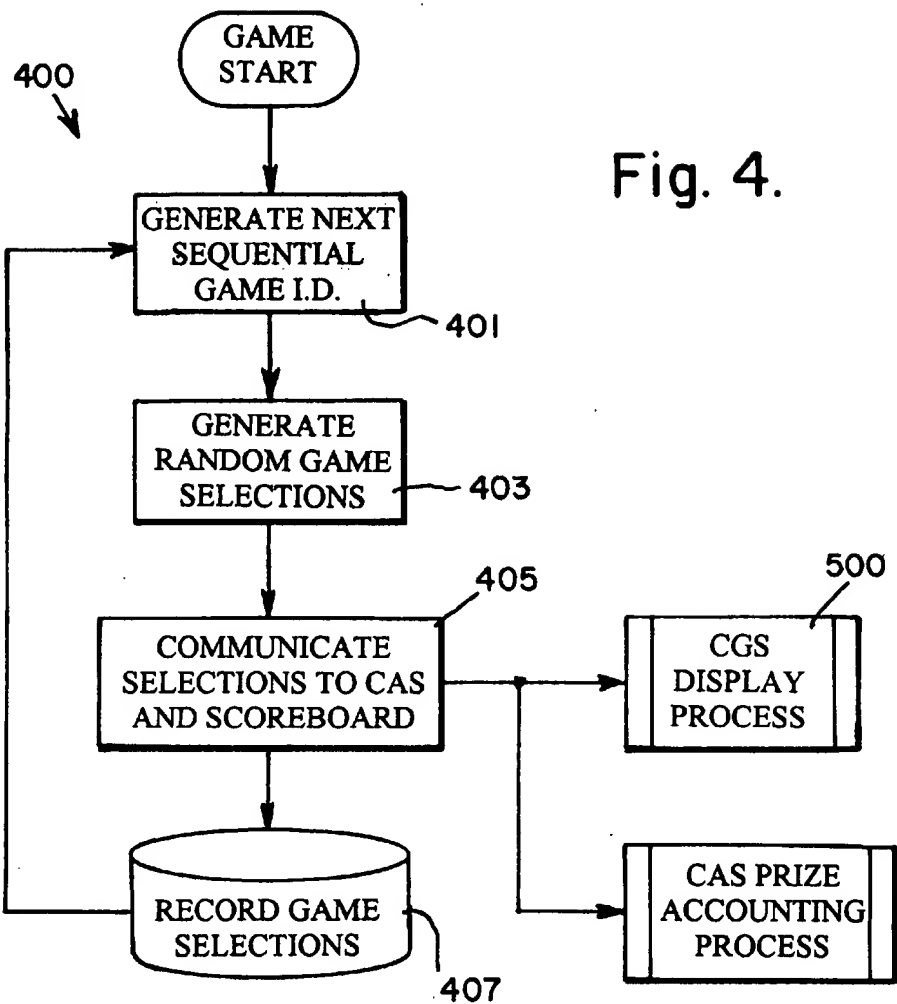
ERASE

ENROLL TICKET

ENTER

BET ONE

BET MAX



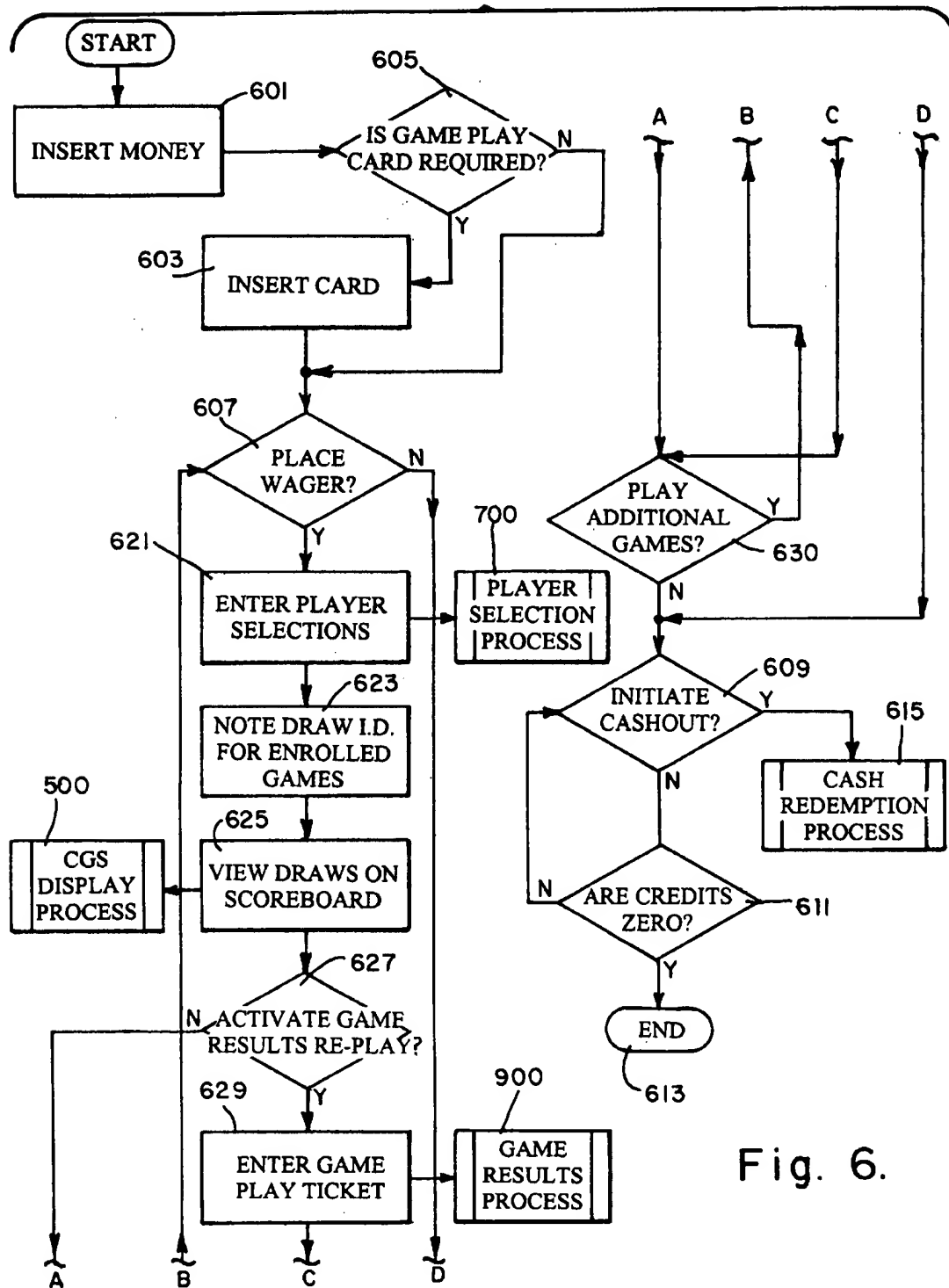


Fig. 6.

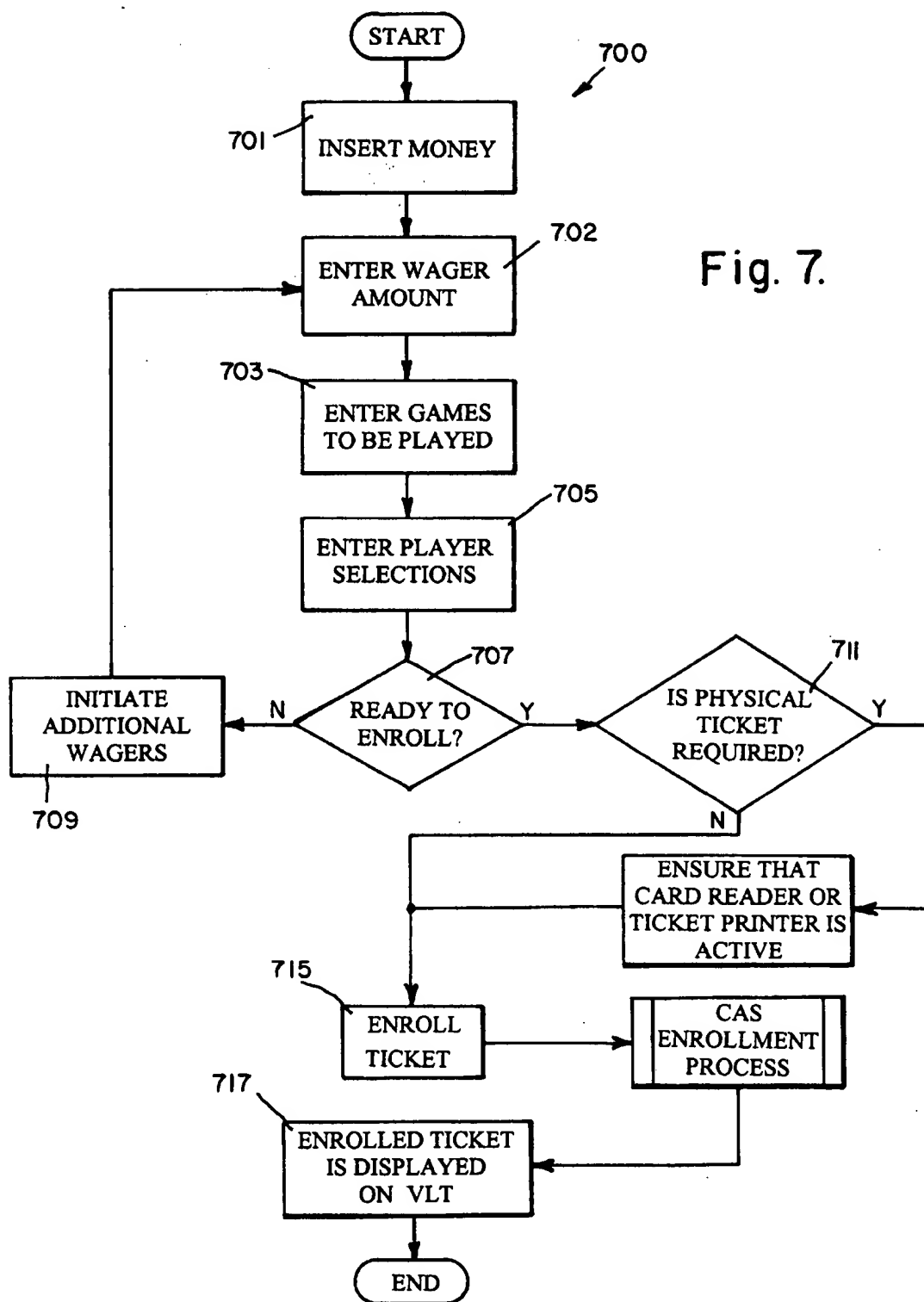


Fig. 8.

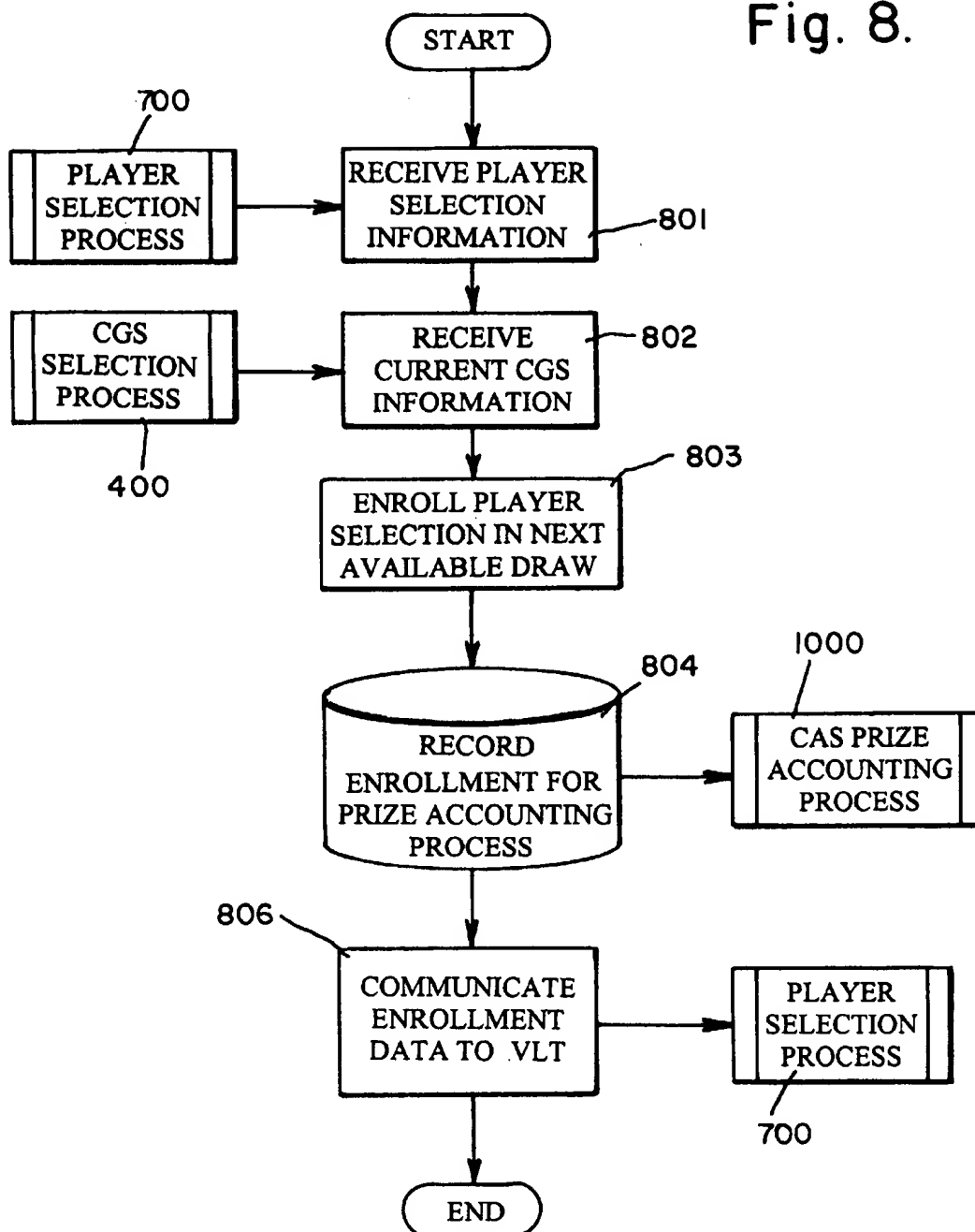
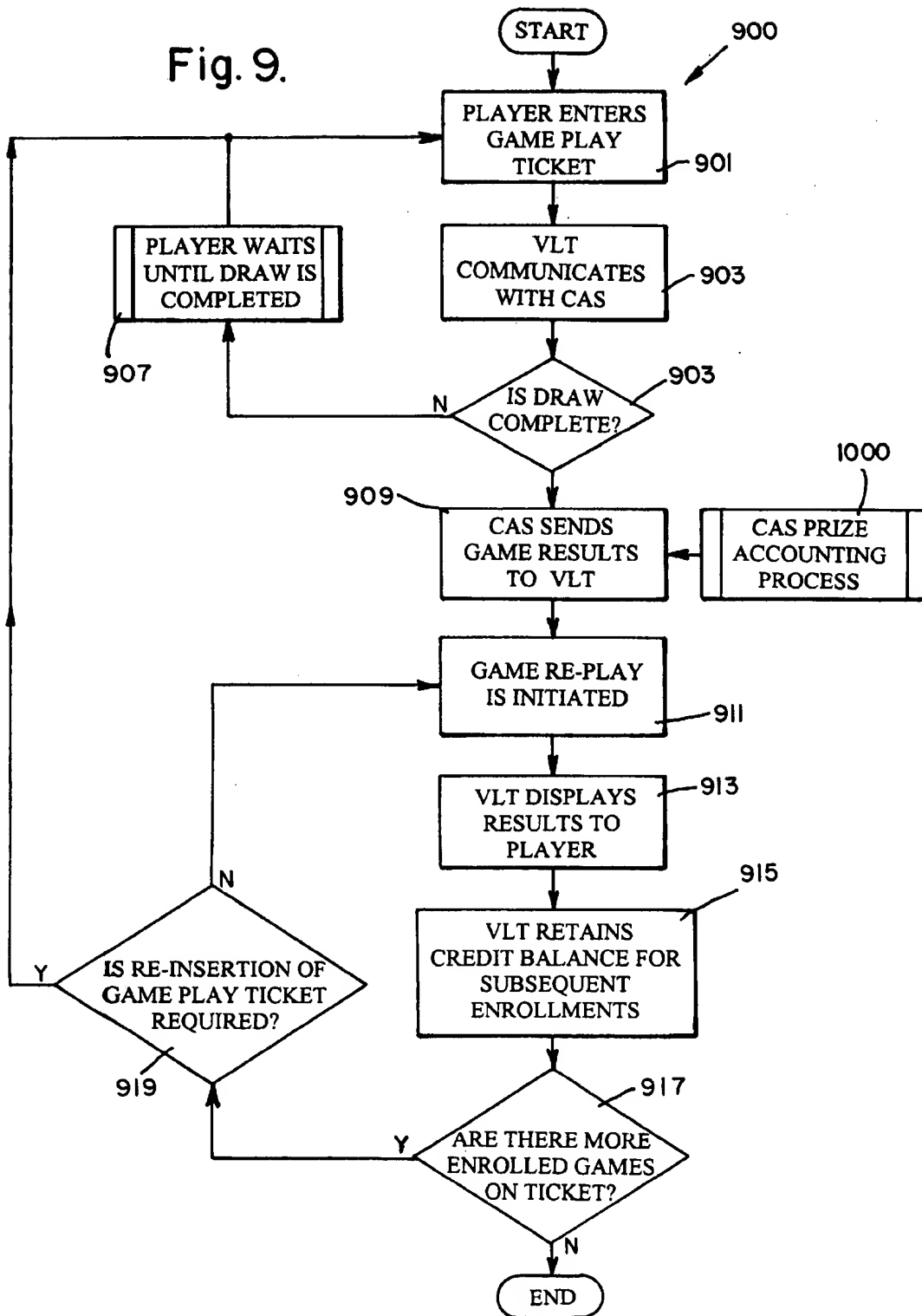


Fig. 9.



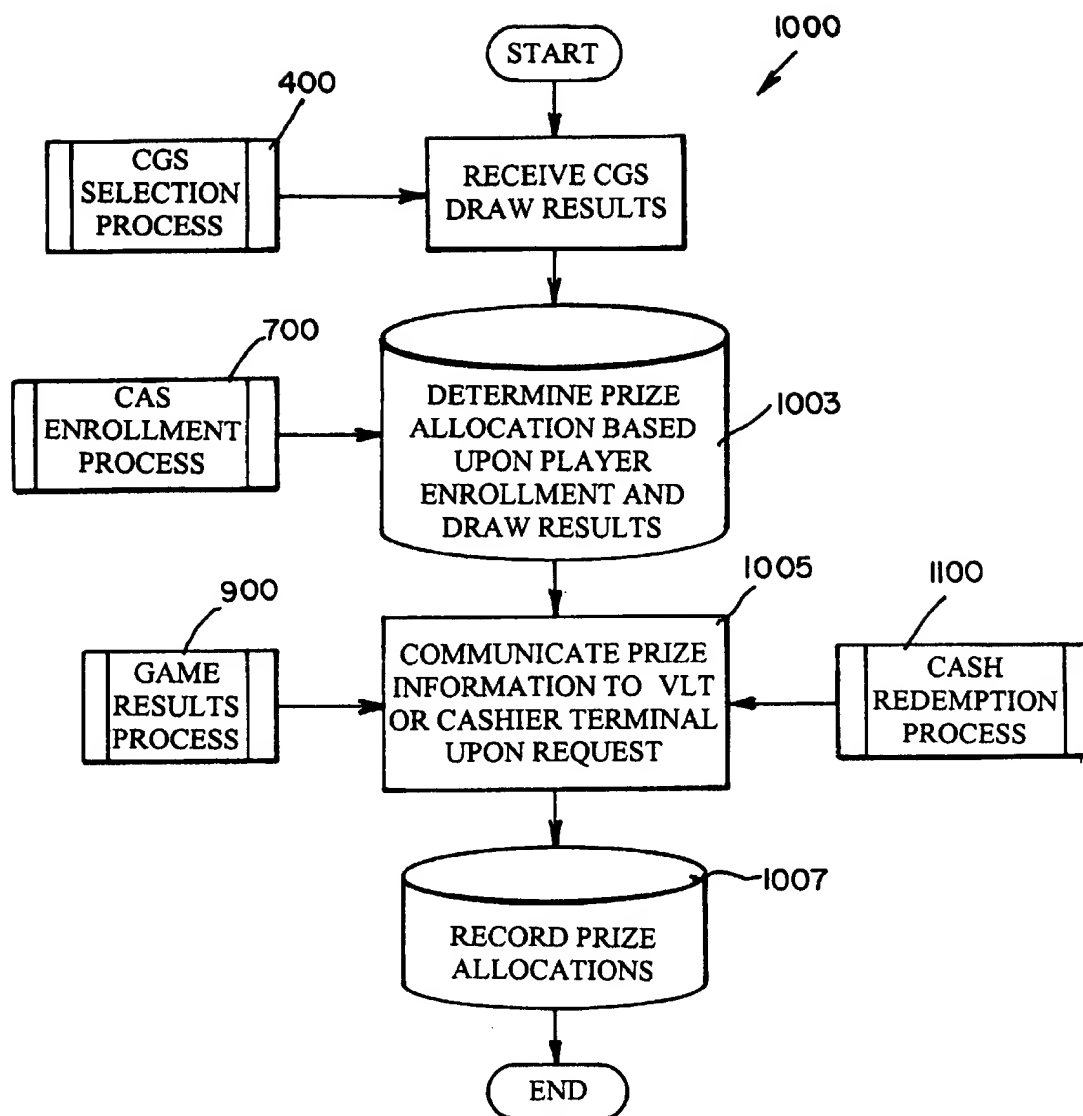


Fig. 10.

1

VIDEO LOTTERY GAME**BACKGROUND OF THE INVENTION**

The present invention pertains to lottery type games, in general, and to electronic lottery games, in particular.

Slot machines have become increasingly popular with players in many legalized gaming establishments. In some jurisdictions, however, legal restrictions on gaming machines have made it impossible to put traditional type slot machines into play in certain gaming facilities. Those jurisdictions however will permit lottery terminals to be used by players to participate in lottery draws.

In these jurisdictions, it is desirable to provide devices that have the excitement of electronic gaming machines while adhering to lottery principles. Such a game would add to the excitement and fun that a player may experience in legalized gaming establishments that are subject to prohibitions on the use of traditional slot machines. Such games would have the additional advantage of being acceptable in certain jurisdictions such as California.

SUMMARY OF THE INVENTION

In accordance with the principles of the invention, an electronic gaming system is provided which is an electronic lottery system but which may be played at video lottery terminals in a manner which provides more excitement and entertainment than is ordinarily available while playing a lottery.

In accordance with the principles of the invention, an electronic lottery gaming system provides for the independent operation of lottery draws and replays of lottery draws for a player in an entertaining fashion. A player may purchase one or more chances in a future lottery draw via an electronic gaming terminal or a video lottery terminal. The player receives an electronic or physical ticket that represents the chance that the player purchased in the future draw before the draw occurs. This allows a player to procure a chance in a draw that is received before valuation of that chance is changed by the draw process.

In one embodiment of a system in accordance with the principles of the invention, the lottery draw or random selection process operates completely independent of all other inputs, activities and processes that may occur in other portions of the gaming system.

Further, in accordance with one aspect of the invention, the system provides for display of the lottery draws as they occur to allow the player after the draw to view the outcome of each draw and assess the value of the chance. In one embodiment of the invention, the display of the draws occurs on remote displays. A system in accordance with the invention provides for the player to enter the chance in electronic form, printed ticket form or other tangible forms at an electronic or video lottery terminal and to view the results of the purchased chance. The player is provided with an entertaining electronic display associated with the results of the purchased chance. The player is then offered the opportunity to continue to view the previously purchased chances, purchase chances in future lottery draws, or redeem the value after the draw occurs.

Still further in accordance with the principles of the invention, the gaming system provides for the playback of randomly selected game outcomes which are selected from a group of game outcomes corresponding to the results of the player's draw selections.

BRIEF DESCRIPTION OF THE DRAWING

The invention will be better understood from a reading of the following detailed description taken in conjunction with

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the drawing in which like reference designators are used to designate like elements, and in which:

FIG. 1 illustrates a system in accordance with the invention in block diagram form;

FIG. 2 is a more detailed block diagram of a portion of the system of FIG. 1;

FIG. 3 is representation of a video display that would be viewed by a player of the game in accordance with the invention;

FIG. 4 is a flow diagram of a selection process in accordance with the invention;

FIG. 5 is a flow diagram of a display process;

FIG. 6 is a flow diagram of the game play in accordance with the invention;

FIG. 7 is a flow diagram of the player selection process;

FIG. 8 is a flow diagram of an enrollment process in accordance with the invention;

FIG. 9 is a flow diagram illustrating the game result process; and

FIG. 10 is a flow diagram illustrating the prize accounting process.

DETAILED DESCRIPTION

The present invention is an electronic system for playing a lottery game on an electronic machine that provides a player more excitement and entertainment than is ordinarily available while playing a traditional lottery game. The illustrative embodiment shown and described herein is particularly well suited to comply with California gaming requirements.

To play electronic lottery games in accordance with the invention, the player inserts or transfers currency or other representation of value into a video lottery terminal. The player selects the number of games to be played and the amount to be wagered on each game. For each game, the player selects his/her choices by touching a touch screen on a display of the video lottery terminal or by requesting the system to make the selection for him by means of an automatic selection option comparable to the "quick pick" selection option of various lottery games. In the embodiment of the invention described herein, a touch screen display is utilized. In other applications, there may be player buttons for some or all of the touch screen functions.

The player's choices are communicated to a computer referred to as a central accounting server which manages operation of the gaming system for the lottery draws, and which enrolls the player's choices in the next available or some future lottery game draw. The player's choices are recorded. The recording is an electronic record that is associated with a game play. For application in California, the player is provided with game play ticket which is a printed or electronically encoded ticket which is tangible and which identifies the number of games played as well as the player choices, game identifier, amount of wager, date and time of enrollment and an identifier for the particular video lottery terminal at which the player entered his choices. The game play ticket may be used as a bearer instrument for verification and redemption of winnings. Thus, in jurisdictions which require a physical ticket, the physical game play ticket may be ejected from the video lottery terminal prior to the lottery draw for each game and prior to display of the enrolled game on one or more scoreboards.

Operating independently of the video lottery terminals and the central accounting server is a central game server

which automatically completes a new lottery game by drawing the numbers, symbols or other outcomes for the game. In the illustrative embodiment of the invention, the central game server periodically completes new lottery games on an automatic basis. In other embodiments of the invention which may be utilized in non-California applications, rather than periodically initiating new games, the central game server may initiate new lottery games based upon player demand.

The lottery draw for each game occurs automatically whether initiated on a periodic basis as in the illustrative embodiment or on demand in other embodiments. In the illustrative embodiment of the invention, which is particularly adapted to California games, the central game server is a separate computer from the central accounting server. However, in other embodiments which are not required to meet California gaming requirements, the function of the central game server and the functions of the central accounting server may reside in a single computer. In this instance, the functions would be separate and independent but the hardware would be common to the functions.

In the illustrative embodiment, the lottery draw is displayed on one or more scoreboards. The player may view the draws for lottery games on the scoreboards to determine whether the player has a winning play ticket. In other embodiments of the invention the video lottery terminal may provide the player with the ability to verify the draw. In other embodiments of the invention, which are not intended to be used in California, there may be no scoreboard display, but the player could request results of a specific game at a video lottery terminal. In the illustrative embodiment of the invention, only after the display of the lottery draw can the video lottery terminal be activated to display the game results. At any time after a lottery game, the player may verify the game result. For instances in which the player receives a game play ticket, the player may verify by inserting the game play ticket into any available video lottery terminal or by handing it to a cashier for verification. In alternate embodiments of the invention which use an electronic record of the player's choices, the player may initiate verification from a video lottery terminal. In either instance, the player's ticket, whether electronic or not, may include several games and the player may verify and automatically replay games that the player enrolled with on that ticket. The player may initiate replay at his/her own pace. In some embodiments of the invention, the player may only replay a subset of the games, such as only winning games.

A player may "cash out" player credits in one or more ways. The player may request and receive a redemption ticket from the video lottery terminal and present it to a cashier or by presenting the game ticket to a cashier. In this case, the ticket is entered at a cashier terminal which is in communication with a central accounting server or system to verify the player credit balance and the player is then paid by the cashier. In other arrangements, a redemption terminal may be provided from which the player could collect winnings with an attendant cashier. In other embodiments of the invention, and in non-California embodiments in particular, there may be currency payouts directly at the video lottery terminals, debit or credit account based transfers, or various forms of tokens or coupons.

A system in accordance with the invention will accommodate multiple types of game play. In one type of game play, each game may have one or more prize levels. Each prize level is associated with a prize for which the amount or method of computation is announced in advance of each lottery draw. In each lottery game, a player is eligible to win

a prize. In one embodiment of the invention, particularly suited for California, the prizes distributed in connection with a prize level are distributed from and solely funded by wagers which have been allocated to a pool associated with that prize level. In other embodiments, an initial seed fund may be used to provide a return for players at the start up of a game. In the illustrative embodiment there is one regular prize pool for each prize level and a reserve pool for each prize level. The reserve pool is used to replenish its associated regular prize pool should that pool become depleted or to supplement bonus or jackpot prizes for that or a higher prize level. When a wager is collected from a player, the wager is recorded by the central accounting system which deducts an administrative fee and allocates the balance to the wager among one or more prize pools for that game. Undistributed prizes in any prize pool following a game draw are carried forward to future game draws.

In another game, which includes an "instant" lottery feature, the draw is a random selection of chances from a predetermined pool of prize values or game outcomes.

Turning now to FIG. 1 a block diagram of a gaming system in accordance with the invention is shown. The system includes a plurality of video lottery terminals **101** coupled to a central computer referred to as the central accounting server **110**. The central accounting server also is coupled to cashier terminals **140**, a scoreboard **150** and a lottery computer or central game server **130**. Turning to FIG. 2, a video lottery terminal **101** is shown in greater detail. The terminal **101** includes a display monitor and touch screen **102**. The display monitor and touch screen **102** may be of a type which is commercially available. The terminal **101** includes a processor and a communications interface **103**. The processor portion of the processor and communications interface **103** may be a commercially available unit having associated therewith various memories and a communications interface. The communications interface portion is used to permit the processor portion to communicate to the central accounting server **110** and to peripheral devices or elements. Other peripheral devices or elements include a bill and/or coin acceptor **104** which may be of a type commercially available and a printer **106** which also may be a commercially available type. In other embodiments of the invention, printer **106** may be substituted for coin, token or currency acceptor **104** or both may be used. The printer **106** is used to dispense a game play ticket and/or redemption ticket. The card reader **108** is one which can receive and utilize a game play ticket or card. The game play ticket reader **108** is a commercially available unit such as the ones utilized in ATM machines to read an ATM card, "smart" card or other card utilized for the credit and debit of money. The reader may be a magnetic stripe card reader that is motorized or non-motorized, a ticket reader with optical or magnetic sensors or other card or ticket reader.

In operation of the system of FIG. 1, if a game play ticket is inserted into a card reader **108** before completion of all games enrolled on the ticket, the game play ticket will be automatically ejected from the card reader without displaying any game results. It should be noted that in other embodiments of the invention, the game play ticket may not be so ejected. The video lottery terminals **101** partially eject game play tickets immediately after a player enrolls in a game as described below to allow the player to remove the ticket, if desired. Each video lottery terminal **101** also provides a redemption ticket in response to a request from a player, assuming that the player has a remaining credit balance. The video lottery terminal **101** in the illustrative embodiment of the invention for California applications

does not dispense coins or currency and is not activated by a handle. Each video lottery terminal 101 accepts currency or other representations of value to qualify a player to participate in one or more games. Each video lottery terminal 101 allows the player to choose combinations of numbers or spots or to select an option of having the system automatically pick combinations of numbers or spots for the player. Each video lottery terminal 101 electronically displays the player's choices using a dedicated display area that is designated for that function only. Player's choices are displayed on the video display terminal 101.

Each video lottery terminal 101 records player choices and game enrollment identification on a game play ticket and may provide the game play tickets and/or redemption tickets. Each video display terminal 101 displays player information such as credit balance and game enrollment and displays in this embodiment which is designed for California applications, for verification purposes, the game results in an area separate from that which displayed the player's choices and only upon activation of the video lottery terminal by inserting a game play ticket into the video lottery terminal. In embodiments of the invention which are not constrained by California restrictions, the display for verification could be shown the same physical area as the player's choice area or, alternatively, display functions on the same display may be used. If the game play ticket is inserted into the video display terminal before completion of all games enrolled on the ticket, the game play ticket will be ejected without the video display terminal displaying any game results. At the player's option, the video lottery terminal 101 displays the current value of each prize pool and the overall estimated odds of winning a prize. In other embodiments, the game play ticket will remain in the video lottery terminal 101 and provide the player with the ability to play games only after they have been drawn by central game server 130. Each video lottery terminal 101 performs security functions necessary to maintain the integrity of the operation of the terminal 101.

Each of the video lottery terminals 101 is coupled to a central accounting server 110. The central accounting server 110 is a central computer of a type commercially available. The central accounting server is also connected to a central game server 130, and to cashier terminals 140. The central accounting server 110 is programmed to manage player account data bases which comprise the amount of money deposited by the player, any winnings or losses of the player, any credit due to the player and accounting functions which are unrelated to the play of the game. Operation of the central game server 130 is independent of the central accounting server 110.

In the illustrative embodiment of the invention shown in the drawing, the central accounting server 110 deducts and accounts for an administrative fee deducted from a player's wager. In other systems, which are not subject to requirements imposed by the state of California, it would be possible for the central accounting server to not deduct administrative fees. The central accounting server 110 stores records for each lottery game generated by the central game server 130. Each lottery game record includes the lottery draws for the game and player enrollment for each game. The central accounting server 110 also provides management, allocation, and accounting with respect to all prize pools on an individual and aggregate basis; and provides accounting and tracking of video lottery terminal activity.

A central game server 130 is a computer of a type commercially available which is programmed solely to

randomly draw lottery numbers or picks on a periodic basis and independently of the central accounting server 110 and the video lottery terminals 101. If for example, a keno game type format is used, a predetermined group of numbers is randomly drawn from a field of 80 numbers in order to determine the outcome of a lottery game. This draw of numbers is, for convenience, referred to as the "CGS draw." The central game server 130 communicates a randomly generated CGS draw for each game to the central accounting server 110. The central game 130 server utilizes well known random number lottery software to generate the CGS draws for each game. Such software is commercially available and may include various security features to ensure integrity of operation.

The central game server 130 also communicates CGS draws to a scoreboard 150 via the central accounting server 110. The scoreboard 150 displays the CGS draw for each lottery game. The scoreboard 150 may be any electronic display device suitable for displaying information and may be any one of a number of commercially available units. Although only one scoreboard 150 is shown in the block diagram, it will be apparent that more than one scoreboard display may be coupled to the system to permit viewing of the CGS draws at more than one location or from many different viewing directions. In the embodiment of the invention shown, the scoreboard 150 displays CGS draws for the last ten lottery games played. The display of each CGS draw will remain in a fixed position on the display for a predetermined period of time, typically for no less than ten seconds.

The system further includes one or more cashier terminals 140. Each cashier terminal 140 is an attendant terminal located remotely from the video lottery terminals 101. Each cashier terminal 140 communicates with the central accounting terminal 110 to verify redemption tickets and game play tickets. Cashier terminals 140 may be of a type generally known and commercially available.

Turning now to FIG. 3, an illustrative video screen display is shown for the video lottery terminals 101. The display shown in FIG. 3 is for a game that is a keno like game. The display includes several fields. A first field 31 shows the selection field from which the player selects the spots or numbers that he/she desires to play. A second field 33 is for selection of the wager amount. A third field 35 is used to indicate the amount of credits remaining. Field 37 is used to enroll the ticket for playback of the draws. Field 39 is used to permit the player to bet a maximum amount on a draw by simply selecting that field. Field 38 allows a player to erase any entry before entering his draw. Finally, field 36 displays the games for which the player has selected draws. The remaining field 41 is utilized to provide a playback field to entertain the player when the player decides to view the simulated play of the draw. In this embodiment of the invention, the display is shared by multiple functions as the state of the terminal changes throughout different stages of play.

FIG. 4 illustrates in flow diagram form the central game server 130 operation. In the embodiment of the invention which is shown in FIG. 1, the central game server 130 only communicates to central accounting server 110. The central accounting server 110, in turn provides display information of CGS draws to the scoreboard and to the video lottery terminals 101. In operation, the central game server 130 generates a sequential identification number for each game in step 401. After the game identification number is generated, the central game server 130 generates the random game selections for the game in step 403. The game iden-

tification and the game selections are communicated by the central game server to the central accounting server 110 and to the scoreboard 140 in step 405. The central game server records in memory the random game selections for each game number in step 407 and then repeats the process. Operation of the central game server is independent of any other operation in the system. The games will occur periodically at a predetermined rate. Lottery game results are transmitted to the central accounting server which displays the game results on its scoreboard 150 in accordance with the CGS display process 500 of FIG. 5.

Information received from the central game server draw process as shown in FIG. 4 is received in step 501 and is used to replace the most aged line in the display sequence with the most current draw information as set forth in step 503. In this manner, the scoreboard display 140 will always display the most recent game draws. The number of games displayed is chosen such as to provide a relative excitement in the game and may vary according to the particular gaming facility requirements.

Turning now to FIG. 6, the overall game play interaction with the player selection process, the central game server process, the game result process and the cash redemption process is shown, with details of the specific processes shown in other Figures. To start play of the game, the player will either insert money as indicated at step 601 or insert a game card as indicated in step 603. If the player inserts money in step 601, the process will make a determination in step 605 as to whether or not a game card must be inserted. After that determination, the system determines in step 607 whether the player has entered a wager and the amount of the wager. If the player has not entered a wager, the system will determine whether the player is to be cashed out in step 609. If the player has not indicated a cash out, the system in step 611 determines whether or not the credits to the player account are zero or not. If the credits are zero, the play of game for this player is ended in step 613. If the credits are not zero, step 611 is repeated. If in step 611 it is determined that a cash out is to be initiated, then the process enters the cash redemption portion as explained in conjunction with FIG. 10.

Returning back to the flow diagram of FIG. 6 at step 607, the system determines whether the player has placed a wager. If the player has placed a wager at step 607, the next step in the process is the entry into the game selection process or the entry of player selections as indicated at step 621. The player selection process 700 is shown in greater detail in the flow diagram of FIG. 7. The player inserts money 701 and enters an initial wager amount at step 702 followed by entry of the games to be played at step 703. Other player selections are entered in step 705 after which a determination must be made as to whether the player entries are ready to be entered into the game at step 707. If additional wagers are to be initiated the process loops back via step 709 to step 702 to enter the additional wager amounts. If at step 707 the player has indicated that his wager and selections are complete, the system determines whether a physical ticket is required at step 711. If it is determined that a physical ticket is required to, for example, meet legal requirements as in California, then step 713 determines that the card reader or ticket printer is activated. After determining that the card reader or ticket printer is active or if it is determined that no physical ticket is required, enrollment is initiated at step 715. The central accounting server process is initiated by branching to the central accounting server enrollment process program 800. After the enrollment 800 is complete, the enrollment is displayed 717 on the player's video display terminal.

Turning to FIG. 8, the enrollment process is shown in more detail. The central accounting server receives the player selection information at step 801. Information from the central game server is also received at step 802 and along with the player selection information is used to enroll the player selection in the next available draw in step 803. The enrollment information at step 804 is stored in memory for prize accounting process step which occurs at the central accounting server at step 805. In addition, the enrollment data is communicated to the video lottery terminal at step 806.

Returning to FIG. 6, after the player's selection process has been complete, the draw identification for the enrolled games is noted in step 623. The game draws are then viewed on the scoreboard at step 625 which branches to the central game server display 500. The player can at any time activate a replay of the game at step 627 by entering the play ticket as indicated at step 629. After the games result process has been completed, the player may decide to play additional games at step 630.

FIG. 9 illustrates the flow operation which occurs as part of the games results process 900. This portion of the process is initiated by the player entering a game ticket in step 901. The game ticket is entered into the system at the video lottery terminal 101 which in turn communicates with the central accounting server 110 in step 903 to provide the player entered information to the central accounting server 110. A determination is made in step 905 to determine whether the draw has been completed. If the draw is not complete, the player waits until the draw is completed in step 907, after which the player again enters a game play ticket. If the draw is complete, the central accounting server 110 sends the game results to the video lottery terminal 101 in step 909. The game results are provided from the central accounting server 110 prize accounting process 1000 which is described in more detail in conjunction with FIG. 10. After the game results are sent to the video lottery terminal 101, the game replay may be initiated in step 911. The video lottery terminal 101 will display the results of the game to the player in step 913. The game replay feature is one advantageous aspect of the invention. The central accounting system 110 has stored in a memory a plurality of groups of video game plays. Each group of game plays corresponds to a winning or losing draw grouping. For example, one group may correspond to lottery draws in which a specific number of matching number draws in a game have been picked in advance by the player, another group would correspond to a second specific number of matching number draws. Within each group of video game plays, several different video game plays are stored. When a player replays the outcome of his lottery draw for a game, the central accounting server 110 identifies the specific group of video game plays to be chosen according to the player's draw outcome for a game. The central accounting server 110 then selects one of the video game plays from the selected group and downloads the selected game play to the player's video lottery terminal 101 which executes the game play.

In the illustrative embodiment, the central game server 130 will initiate a new lottery game every second. If a player decides to play the game, he/she will play either the minimum or the maximum amount. The player may then select the specific numbers for each draw or may select "quick pick" play. The quick pick choice results in a random number generator located either at the central accounting server 110 or within the terminal 101 selecting the requisite number of numbers for a draw. After the number selection is made, the player hits a "play" button area on the display.

The hitting of the play button enrolls the player in the next available lottery game which is periodically and automatically drawn by the central game server. The numbers drawn in that subsequent game by the central game server 130 are transmitted to the central accounting server 110. The players "quick pick" numbers are compared by the central accounting server 110 to the lottery draw numbers for the game. The results of that game are recorded and are transmitted back to the player terminal. The central accounting system 110 identifies a group of video game plays stored in memory which have an end result outcome determined by matching the results of the draw with the player choices and comparing the matches to an award schedule. The pay amount from the award schedule may depend upon other winning players and upon the amount of funds available in a player pool corresponding to the players draw.

The video lottery terminal 101 will retain the credit balance for the player for subsequent draw enrollments in step 915. A determination is made as to whether there are any more enrolled games on the game ticket in step 917. If there are more games then step 919 will determine whether the operation is reentered at step 901 or at step 911 depending on whether the system requires reinsertion of the game play ticket.

FIG. 10 illustrates the central accounting server 110 operation and indicates the interaction of the central game server 130 selection process 400 with the games result process 900, the central accounting server enrollment process 700 and a cash redemption process 1100 with the CAS prize accounting process 1000. As indicated in step 1001, the lottery draw results are periodically received from the central game server selection process 400. The central accounting server determines the prize allocation based upon the draw results and the enrollment process 700 as indicated in step 1003. After the prize allocation is determined, the prize information is communicated to the video lottery terminals 101 or to one or more cashier terminals upon request as part of the cash redemption process 1100 and is also communicated to video lottery terminals 101 as part of the game results process 900. The prize allocations are recorded into memory of the central accounting server in step 1007.

Details of the cash redemption process are not shown in the drawing Figures. However, the principle of this process is simple and straight forward. A player requests an attendant at a cashier terminal to redeem the value from a game play ticket. The attendant will then enter the player's game play ticket. The central accounting system 110 receives the information from the game play ticket, verifies the accuracy and integrity of the information and provides payout authorization information back to the cashier.

Although the invention has been described in terms of the illustrative embodiment, it will be appreciated by those skilled in the art that various changes and modifications may be made to the illustrative embodiment without departing from the spirit or scope of the invention. It is intended that the scope of the invention not be limited in any way to the illustrative embodiment shown and described but that the invention be limited only by the claims appended hereto.

What is claimed is:

1. An electronic gaming system comprising:

a plurality of player terminals for playing electronic games, each of said player terminals having a display and having data entry controls for entry of player selection information for future lottery games;

first computer programs executable for controlling and managing said terminals;

second computer programs executable independent of said first computer programs for automatically initiating a lottery draw for each new lottery game;

each of said terminals, when operated by a player, providing to said first computer programs the player selection information entered by the player, said first computer programs providing game identification information to the terminal being operated by the player, said terminal being operated by the player issuing a game play ticket including said player selection information and said game identification information; and

said terminal being operable, after the lottery draw for the game identified on said ticket and upon said ticket being entered at said terminal, for displaying a replay of the draw awarding a predetermined prize for the identified game.

2. An electronic gaming system according to claim 1, wherein:

said terminal communicates with said first computer programs, said first computer programs matching the lottery draw for said identified game with said player selection information for receiving said replay.

3. An electronic gaming system according to claim 1, wherein:

said first computer programs match said lottery draw and said player selection information against a prize schedule for awarding said predetermined prize.

4. An electronic gaming system according to claim 1, wherein:

said first computer programs randomly select said replay from a group of game plays associated with said predetermined prize.

5. An electronic gaming system in accordance with claim 4, wherein:

said first computer programs select said group of game plays from a plurality of groups of game plays, each group of said plurality of groups of game plays having a predetermined relationship to lottery prizes.

6. An electronic gaming system according to claim 1, wherein:

at least one other terminal of said plurality of terminals being operable, after the lottery draw for the game identified in said ticket and upon said ticket being entered into said at least one other terminal, for displaying said replay.

7. An electronic gaming system according to claim 1, wherein:

each terminal of said plurality of terminals being operable, after the lottery draw for the game identified in said ticket and upon said ticket being entered into a one of said terminals, for displaying on said one of said terminals said replay.

8. An electronic gaming system in accordance with claim 7, wherein:

said terminals are operable for displaying said replay in an entertaining manner with a predetermined outcome.

9. An electronic gaming system in accordance with claim 5, wherein:

each said group of said plurality of groups of game plays corresponds to predetermined lottery game outcomes.

10. An electronic gaming system in accordance with claim 1, comprising:

a first computer for operating said first computer programs.

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11. An electronic gaming system in accordance with claim 10, comprising:

a second computer for operating said second computer programs, said second computer being separate from said first computer.

12. An electronic gaming system in accordance with claim 10, wherein:

said first computer operates said second programs.

13. An electronic gaming system in accordance with claim 1, comprising:

at least one scoreboard display for displaying said lottery draw for general viewing by the players.

14. An electronic gaming system in accordance with claim 13, wherein:

said at least one scoreboard displays the lottery draws for a predetermined number of lottery games.

15. An electronic gaming system in accordance with claim 1, wherein:

said second computer programs automatically assigns a unique game identifier to each said new lottery game.

16. A method of playing a video lottery game comprising:

a participating player entering player selection information for a future lottery game at a one player terminal of a plurality of player terminals;

a central accounting server receiving said player selection information from said one terminal and game identification information from a central game server and enrolling the player in the future lottery game;

said central accounting server providing to said one player terminal said game identification information concerning the future lottery game in which the player is enrolled;

said one terminal issuing a game play ticket including said player selection information and said game identification information;

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said central game server performing a lottery draw for said lottery game and providing the draw information to said central accounting server; and

entering said ticket at any terminal of said plurality of game terminals and, provided said lottery draw had been completed, said any terminal receiving a game replay from said central accounting server corresponding to the player's outcome for the enrolled game and displaying said game replay.

17. A method according to claim 16, wherein:

in the ticket entering step, said any terminal rejecting said ticket without displaying said game replay if said lottery draw had not been completed.

18. A method according to claim 16, wherein:

in the ticket entering step, said any one terminal communicates with said central accounting server, said central accounting server matching said lottery draw with said player selection information.

19. A method according to claim 16, wherein:

in the ticket entering step, said central accounting server matching said lottery draw and said player selection information against a prize schedule for awarding a predetermined prize.

20. A method of playing a video lottery game according to claim 16, wherein:

in the ticket entering step, said game replay awards a predetermined prize for said enrolled game.

21. A method according to claim 20, wherein:

in the ticket entering step, said game replay is randomly selected from a group of game plays awarding said predetermined prize.

22. A method according to claim 21, wherein:

in the ticket entering step, said group of game plays is selected from a plurality of groups of game plays, each group of said plurality of groups of game plays having a predetermined relationship to lottery prizes.

* * * * *

EVIDENCE APPENDIX I
COPY OF SGI INSIGHTS, SCIENTIFIC GAMING
INTERNATIONAL, VOL. 1, ISSUE NO. 5 (JANUARY 1999)

SGI INSIGHTS

A Publication of Scientific Games International Providing Lottery Products, Integrated Systems, and Support Services Worldwide

Dec/JAN
1998/99

VOLUME 1
ISSUE 5

Customer Satisfaction Teams: Response to an Industry Trend

The industry trend toward smaller games and faster turnaround times has done more than help add dollars to a lottery's bottom line. It has also added to a supplier's pre-press workload.

This year Scientific Games will produce more than 1,000 games, compared to 280 games in the years that predate the multiple game strategy.

"Part of the reason we transitioned to *Customer Satisfaction Teams (CSTs)* was to address the industry's fundamental shift from long-running games to smaller games and faster turnarounds," says Jay Jordan, Scientific Games' Manager of Corporate Reengineering.

"This strategic shift has put a tremendous burden on the pre-press process, because the same amount of pre-press work is required whether a game has a print quantity of 2 million or 200 million."

Under the old system, Scientific Games personnel were grouped according to department (i.e., account services, graphics, production control, programming and pricing).

The way it used to work was the account services department would work on a game. Then it would go to graphics; then would re-emerge in account services; and then onto a completely different department called production control.

"As a game moved from department to department, someone else would have to pick up the pieces and fully understand the nuances of what had happened up to that point, which was not

always easy," says Jordan. "What we had before teams was a lot of hand-offs, which worked well when fewer games were being produced. But now that the environment is vastly different, 'procedural status quo' simply is no longer the most efficient and effective way to serve our customers."

Now, the departments are gone. *The teams* are now the departments. No longer do account services people sit together in one room, graphics people in another, and production control in still another.

Now they all work together side-by-side in the same room.

"You no longer hear, *We're in graphics and you're in production control*. Instead, you hear, *We're part of Team Equinox, Synergy, Teamworks, Player's Club and Globetrotters*," says Jordan. "We're creating a partnership, a team, and the customer is part of that team."

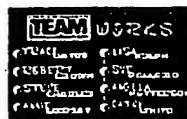
"In the past, every department did their own thing, and once they finished their part, the game became somebody else's responsibility. But with a team approach, the feeling is, *This is our baby. We're not only held accountable, we want to be held*



TEAM EQUINOX



SYNERGY



TEAMWORKS



THE PLAYER'S CLUB



GLOBETROTTERS

continued inside, please see *Customer Satisfaction Teams*

Daily Race Game™ Off and Running in Delaware

On November 18, the Delaware Lottery held its first televised launch of the *Daily Race Game™*, a computer-animated horse racing game the Lottery hopes will boost its on-line sales.



Renamed *Run for the Money* by the Delaware Lottery, this new game gives players the opportunity to choose 3 horses from a field of 12. Players win by matching their picks in *exact order or any order*. Tickets cost \$2. Prizes range from \$2 to \$580. Odds of winning range from 1:4 to 1:1,320.

Exact Order Ticket	Odds of winning	Prize
Match 1st	1:12	\$5
Match 1st and 2nd	1:132	\$30
Match 1st, 2nd and 3rd	1:1,320	\$580
Any Order Ticket		
1 of 3 wins race	1:4	\$2
2 of 3 finish 1st and 2nd	1:22	\$7
3 finish 1st, 2nd and 3rd	1:220	\$82

continued inside, please see *Daily Race Game™*

FROM OUR PERSPECTIVE



by Jim Kennedy,
SGI Regional Director

To quote Bob Dylan, "The times, they are a changin'."

As an industry, we have our work cut out for us as we move sales higher from here. I believe this to be true because a new retail paradigm is fast emerging, one that demands a new approach to selling consumer products in high-volume, high-tech retail environments. From my perspective, our ability to penetrate these environments will be a key factor whether instant sales growth can be sustained over the next 5 to 10 years. And this effort will require a cooperative partnership between lotteries and suppliers.

In today's new retail paradigm, consumer products companies are forming closer business partnerships with their distributors, integrating their respective technologies to produce greater efficiencies and value for both retailer and consumer. Procter & Gamble, for example, now uses the Internet to track its products on a daily basis, instead of relying on once-a-week sales estimates from store managers. P&G is able to do this, having integrated its systems with those of its major business partners, such as Wal-Mart.

Yet at a time when lotteries are looking to penetrate more deeply into supermarkets and other multi-lane retail environments, the industry appears to be distancing itself from a solution. Let me explain.

The industry's primary emphasis continues to be on receiving low-cost tickets. And low-cost tickets are exactly what lotteries are getting. While the economics of this strategy may make sense in a growing market, what happens when sales flatten or turn south (as they appear to be doing)? Where and to whom do lotteries turn?

If history is a gauge, they will turn to marketing and the next program to revitalize sales. If they're unable to find a solution internally, they will then look externally. But what lotteries risk finding in their external search — assuming their emphasis on low-cost tickets continues — are fewer programs because, quite frankly, there will be fewer suppliers with the financial means or interest to develop them. What's more, suppliers that are left standing will have abandoned their investments in R&D and, instead, invested where the industry has told them: In equipment that produces low-cost tickets. Untangle the results of this purchasing strategy and what you find are lotteries saving \$2 per thousand on a product that generates \$250 per thousand when sold.

Consider this: Lotteries make money selling tickets, not purchasing them. Assuming you accept this notion — as we move forward from here — isn't it in our collective, long-term best interests to begin shifting the emphasis away from that which produces the least value (purchasing tickets), toward that which produces the greatest value (selling tickets)?

Imagine a procurement that is structured on the ability to generate sales and revenues. In this environment, suppliers would have as much at stake in a lottery's success as the lottery itself. In fact they would have more at stake, given the profit margin on a game is approximately 100 times greater for a lottery than a supplier. Suppliers would also increase their investments in systems, programs, research, games and cost control. They could then spread these costs over many lotteries, thereby delivering these mission-critical functions to individual lotteries at lower costs.

Scientific Games is committed to the long-term development of the lottery business. That is why we have continually made important investments in these mission-critical functions (SGI-NET™, SciScan Technology®, Winner's Choice™, and the Daily Race Game™, to name a few), with more investments to come in 1999.

The future of our industry depends on the complex integration of marketing, systems and operations — all working together to produce and sell that simple moment of entertainment we call lottery. Don't waste the next four years of a contract wrangling over fractions of a penny on purchasing; instead, let us move into a cooperative arrangement that generates real revenues. ☐

Customer Satisfaction Teams:

continued from front page

accountable. This is ours; this is our work — from beginning to end."

Part of the philosophy behind 'teams' is that customers are better served when people are able to focus on a core group of customers on a consistent, everyday basis. As the theory goes, once team members are in sync with each other — as well as with their customers — response and turnaround times will be faster; internal bottlenecks will be eliminated; errors will be reduced; communications and customer recommendations will be better. Decisions will also be better because, as Jordan puts it: "Two minds are always better than one."

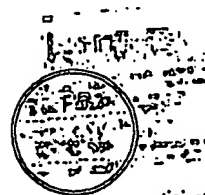
The new team philosophy also encourages cross-training among members. The thinking is, the better each team member understands what the others do, the better he can serve his team, his customers, and offer recommendations that contribute to the whole.

The Customer Satisfaction Teams are only one element of a sweeping, company-wide reengineering initiative designed to: (1) accommodate more games with smaller print quantities; (2) deliver error-free games and deliverables; (3) accelerate cycle time from approved artwork and prize structure to date of shipment; and (4) respond quicker to customer needs.

Jordan is quick to point out that just as the process improvement initiative took time to develop and evolve (it has its roots in 1995), so, too, will it take time for each CST to become fully efficient.

"This initiative will continue to evolve and we will continually modify it to best serve the customer," says Jordan. "Are we going to be 100% flawless out of the gate? Absolutely not. In the final analysis, however, what we want to cultivate is a process that is so much better than any other process ever developed that customers won't want to do business any other way." ☐

Daily Race Game™ continued from front page



As a unique feature, a 9-digit Winner's Circle Number — pre-printed on every ticket — gives players an opportunity to win \$2,500 in a second chance drawing.

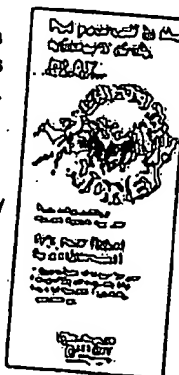
One winner is chosen daily from among all players

participating in that night's race.

Odds of hitting the Winner's Circle Number depends on the number of tickets sold. The \$2,500 is guaranteed daily.

Run for the Money races are simulcast every Monday, Wednesday and Friday on the state's public broadcasting system (PBS), as well as on certain radio stations throughout the state.

The Delaware Lottery plans to increase its advertising support of the game in the weeks to come, which will include television, radio, outdoor, newspaper and point-of-sale advertising. ☐



The Daily Race Game™ is a joint venture product of Scientific Games and TeleCom Productions.

RESEARCH REVIEWS

New Analytical Tool Measures Seasonality

by Deborah Sawyer, SGI Research Manager

Memo to lottery marketing department: As you know, the "Lucky Bucks" ticket launched in May outsold the "Money Mania" ticket launched in August. To update you, we are now analyzing why this happened, specifically looking at how differences in prize structures and launch dates may have affected

sales. We'll issue our findings next week. —Research Department.

Lotteries conduct these types of post analyses all the time. "Why" a game outsold another is more important than simply knowing that it did. The answers enable lotteries to reuse the popular features on future games and avoid repeating the mistakes that may have led to poor sales.

There are many factors to consider in a post analysis, one being 'seasonality.' Some seasons correlate with sales peaks, others with sales valleys. To properly assess seasonality, Scientific Games has computed seasonal indices for each of its US lottery customers. SGI Account Executives now use this analytical tool for game planning, order quantity determination, and sales analysis. These indices — which are based on 5 years of weekly sales data for each US lottery — are essential for getting a 'true and accurate picture' of a game's appeal. ☐

A note of caution: To determine seasonal affect on sales, first factor out any underlying trend. Upward or downward underlying trends, if not factored out, will lead to computation of erroneous seasonal factors.

DOCKSIDE INSIGHTS

by Jim Culver



"You're hired! Start work Monday as our new Marketing Director and attend all executive staff meetings. However, do not speak at these meetings. Do not express an opinion at any time during the first 6 months of your employment. Make no significant decisions during that period."

Those were my instructions when I first entered the lottery industry. You've got to be kidding. I was loaded with ideas. I could be helpful. I could be a contributor, but I was muzzled. No one wanted to hear my thoughts or my opinions, because I knew so little about the lottery.

I did as I was told. I worked hard, attended meetings and never uttered a word. My tongue bled from biting it, but a curious thing happened. Since I could not talk, even to venture a brilliant (or so I thought) idea, I found myself listening more and learning faster.

One of the first things I learned was that my ideas were not that brilliant. In fact many of them had already been attempted and some had previously been declared disasters. So much for that! I was spared considerable embarrassment by my forced silence, and I learned the reason for many of the current marketing practices.

But one day, a curious thing happened. I was sitting quietly in a meeting when suddenly someone asked my opinion. I looked up to see the entire group around the conference table looking at me, expectantly. They actually wanted to hear what I had to say. I mumbled a few innocuous thoughts and then retreated to the sanctity of my silent cocoon.

But the ice was broken. Free at last! I could speak! Someone actually cared what I thought. I could express ideas, and someone would listen. Now that I knew a little more about the complexities of the lottery industry, perhaps I could begin to make some meaningful contributions.

In retrospect, it was a painful, but effective experience. One cannot talk and learn at the same time. It's impossible. Knowledge is wonderful trade-off for pontification and I recommend it to all new lottery employees, even Directors. Look before you leap. Listen before you speak. Learn before you lecture. It saves everyone time and makes meetings more productive.

But Michael Jones disagrees. The former Illinois Lottery Director and current consultant chastises vendors in his September IGWB column, for "resisting challenges to current marketing orthodoxy." He sympathizes with new Directors who are told that current methods are sacrosanct.

Michael Jones has paid his dues in this industry. He has contributed substantially with ideas, concepts and marketing improvements. When he talks, I listen. But he is also a friend, and friends can talk plainly to one another. Besides, Michael owes me. I once found his lost golf ball on a Colorado golf course and saved him 2 penalty strokes. (Golfers take these things seriously.)

So, my response to Michael is, "Claptrap!" Advising new lottery people to immediately challenge current marketing tactics and strategies is academically interesting, but terribly unproductive. This is not the local poet's corner, Michael. It is a business, and a rather large one at that. The stakes are too high, time is precious and the risk is too great to indulge in philosophical challenges by neophytes still attempting to learn how to spell lottery.

Some years ago, a new Director was appointed to head a then successful lottery. She decided to immediately challenge the conventional wisdom espoused by her staff and her vendor. She conducted a personal research study by talking with six retailers. Based on her conclusive findings and vast (three weeks) lottery experience, she scrapped the current marketing plan and introduced a series of games with clever titles like *You Asked For It* and *People's Choice*.

These exciting games sold dozens of tickets. Instant sales for that lottery dropped into the proverbial toilet and have never totally recovered. That Director has long departed, but her legacy lives on. Once a market is lost, it is difficult, if not impossible, to recapture.

So, Michael, old pal, your concept of challenging current orthodoxies is interesting, but two bricks short of a full load. Orson Welles would have said, "It is a wine whose time should never come." Once the lottery newcomer learns the industry, challenge away. However, it is foolhardy to challenge something about which one knows so little. Wait six months or so, then discuss potential changes with the experts. It may not be as much fun, but it sells more tickets. ☐

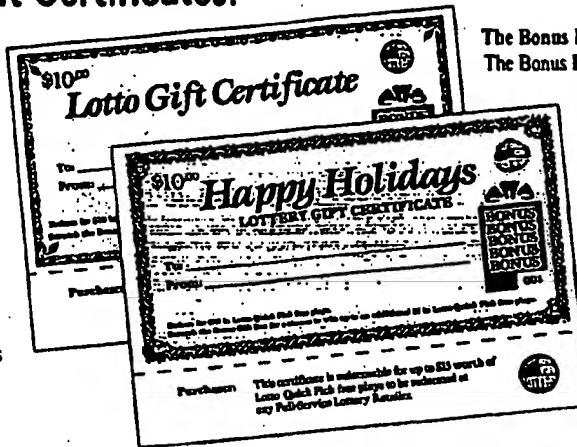
Jim Culver was formerly the SGI VP for Sales and Marketing. He retired in February, 1998 and now enjoys life on the water and golf course. He can be E-mailed at JRCulver@aol.com.

HOT OFF THE PRESS

New York Lottery Gift Certificates!

A great holiday gift! We've all witnessed the success of winter holiday scratch tickets – success due in large part to their appeal as gifts! Now, New Yorkers can give Lotto tickets as gifts via a "Happy Holidays" Lottery Gift Certificate! Gift recipients then have the choice of when to play Lotto (either immediately; when the jackpot gets bigger; or at some other time of their choosing).

Easy handling! Recipients redeem the certificate at any full-service lottery retailer. Retailers simply key in the PIN number, swipe the ticket, and the terminal automatically prints out a ticket for 10 Lotto Quick Pick plays – or more if the player wins the bonus.



The Bonus Box: A very clever win/win solution! The Bonus Box gives players a chance to win 2, 3, or 5 extra Lotto tickets. Retailers also benefit because players will have already revealed the PIN number when they scratch the bonus box, thereby relieving the retailer of this burden.

A great gift idea for anytime! The New York Lottery predicts great success for the gift certificates. That's why after the Happy Holiday certificates run out, they have a separate Lotto Gift Certificate ready for distribution and sale year-round.



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EVIDENCE APPENDIX J
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(19) **United States**(12) **Patent Application Publication**
MCCOLLOM et al.(10) **Pub. No.: US 2002/0010623 A1**(43) **Pub. Date: Jan. 24, 2002**(54) **SYSTEM AND METHOD FOR PUBLISHING,
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FORT COLLINS, CO 80527-2400 (US)(73) **Assignee: Hewlett-Packard Company**(*) **Notice:** This is a publication of a continued prosecution application (CPA) filed under 37 CFR 1.53(d).(21) **Appl. No.: 09/203,247**(22) **Filed: Dec. 1, 1998****Related U.S. Application Data**

(63) Continuation-in-part of application No. 09/151,498, filed on Sep. 11, 1998. Continuation-in-part of application No. 09/149,775, filed on Sep. 8, 1998, now Pat. No. 6,266,058.

Publication Classification(51) **Int. Cl.⁷ G06F 17/60; G06F 15/16**
(52) **U.S. Cl. 705/14; 705/26; 709/203**(57) **ABSTRACT**

A system and method publish, distribute and redeem coupons on a network system. The system and method utilize a merchant server and a commerce server. The merchant server provides the merchant the ability to transmit requests to create a coupon, and transmit coupon data regarding the coupon creation. The commerce server receives the requests to create a coupon, and receives the coupon creation data. The commerce server saves the coupon data to a coupon database, and provides access to the coupon to customers on the network. A merchant server further provides the merchant the ability to receive a request for purchasing an item, and a request for redeeming a coupon for that purchase from a consumer. The merchant server verifies the coupon is a valid coupon, and allows the coupon to be redeemed in the purchase of the item if the coupon is valid. The merchant server upon redemption of the coupon, updates a coupon database to record that the coupon has been redeemed by the customer.

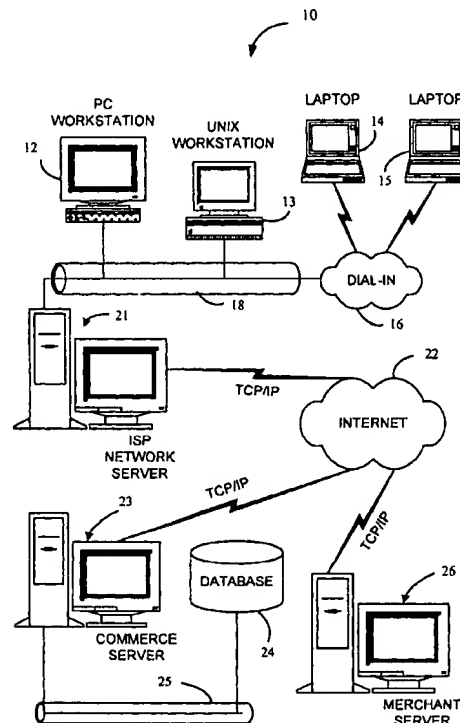


FIG. 1

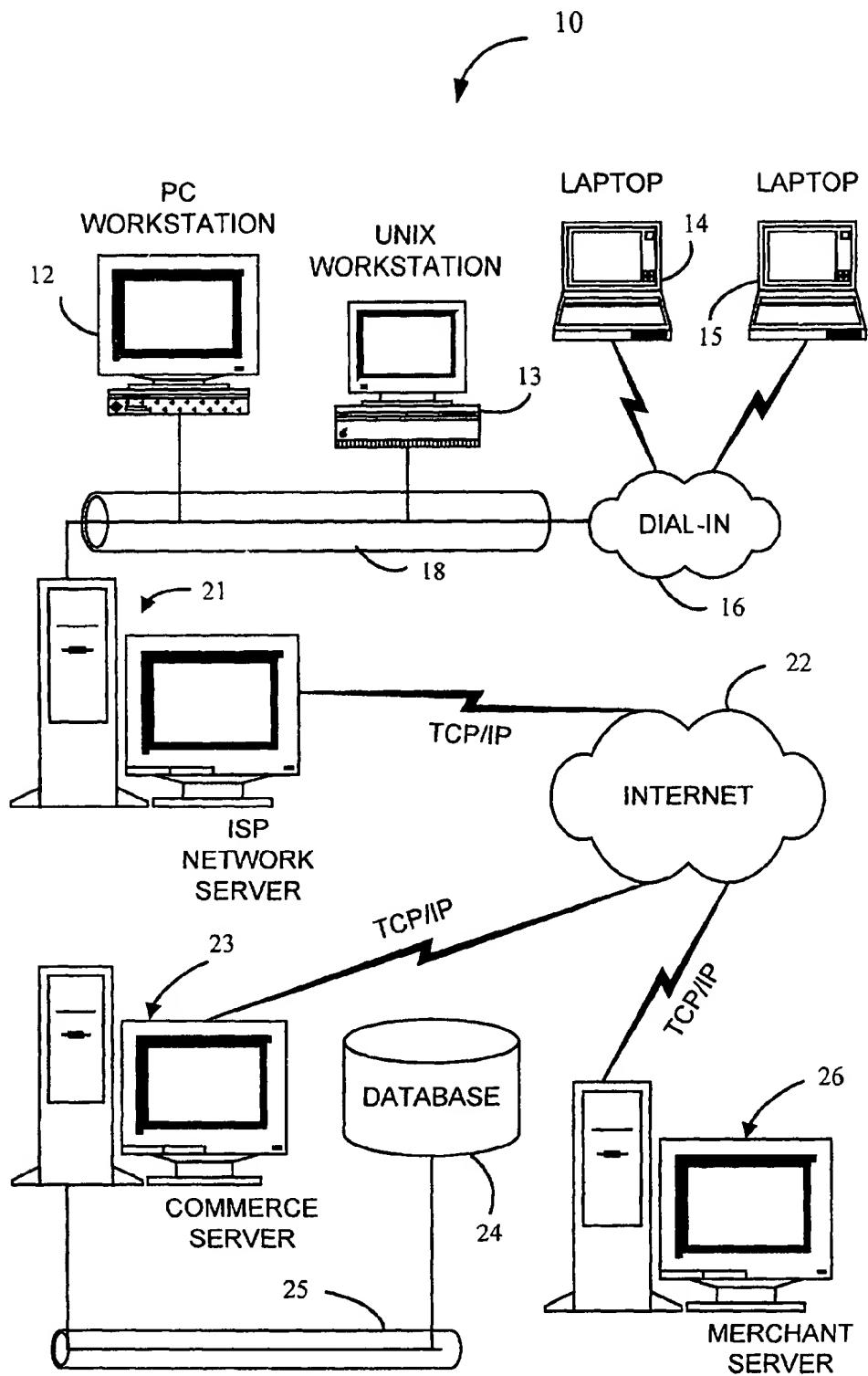
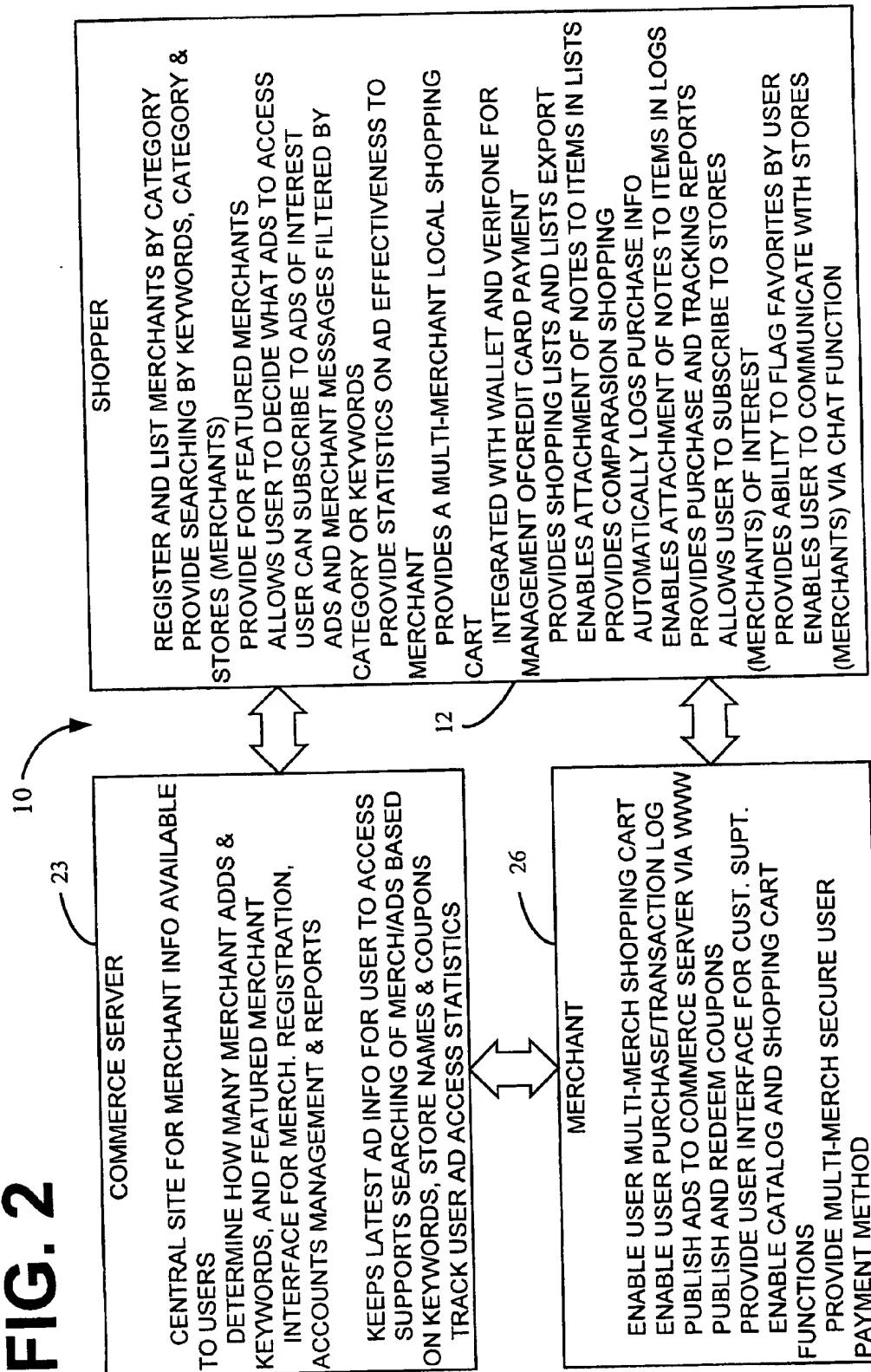
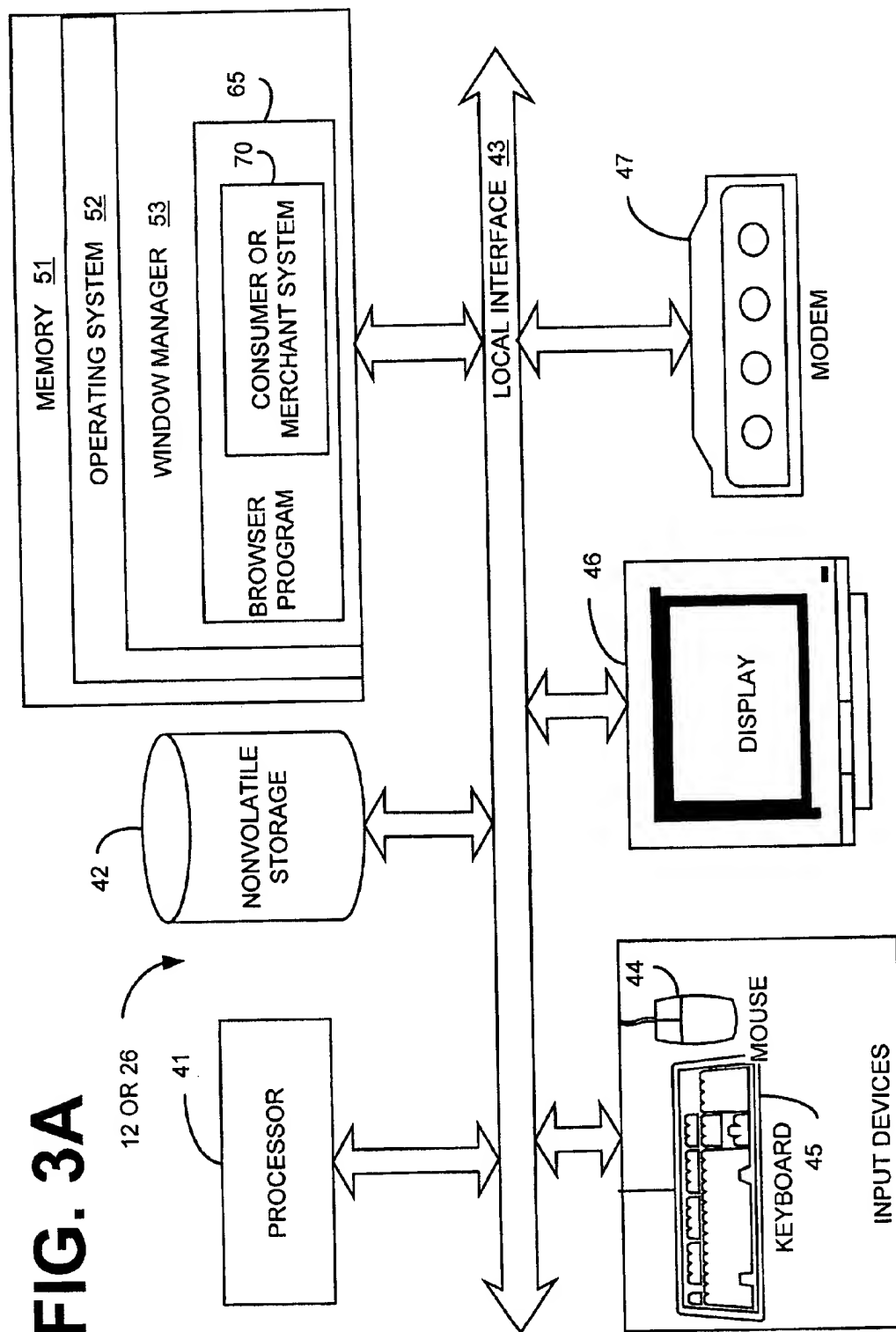


FIG. 2





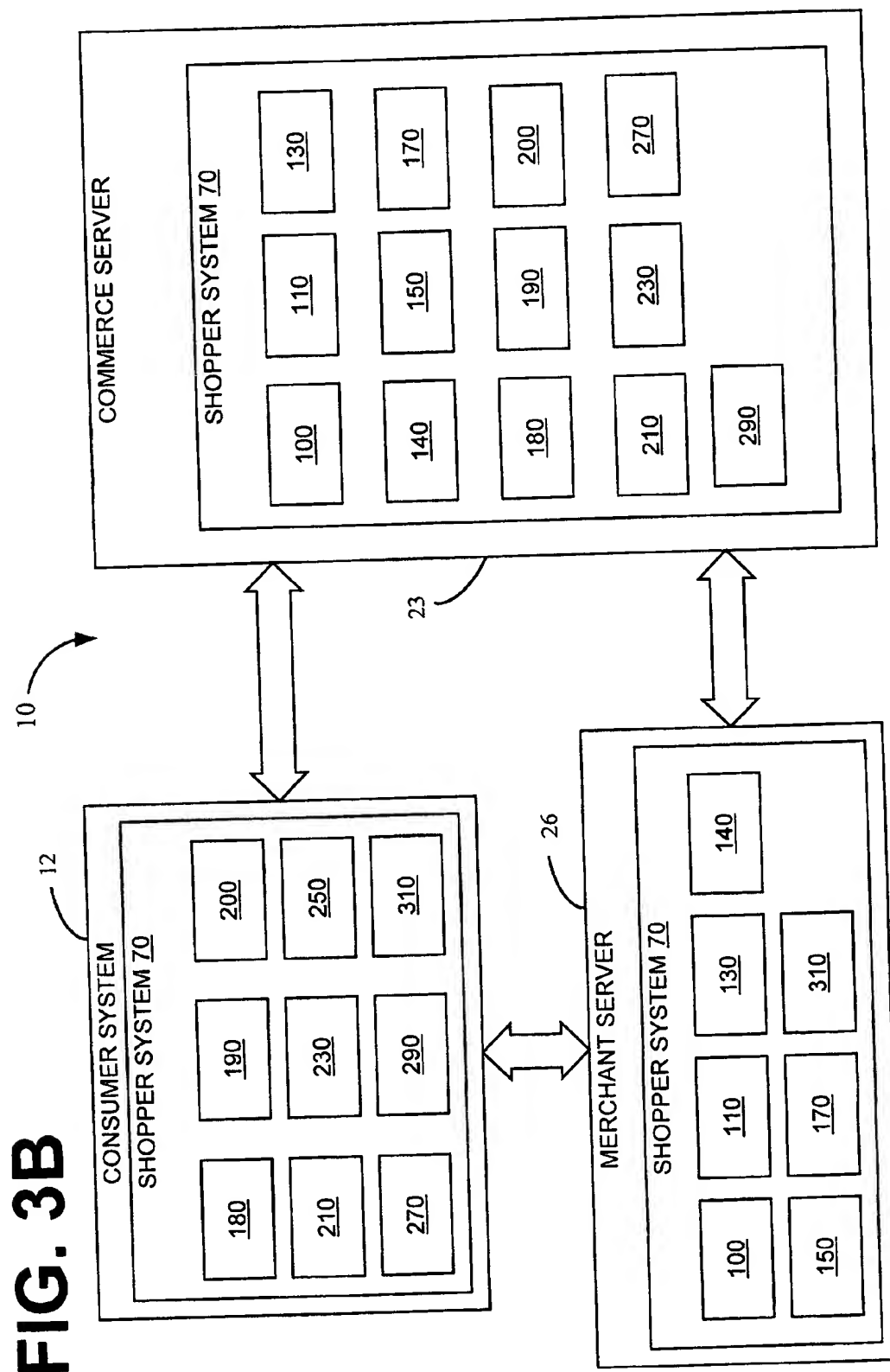


FIG. 4

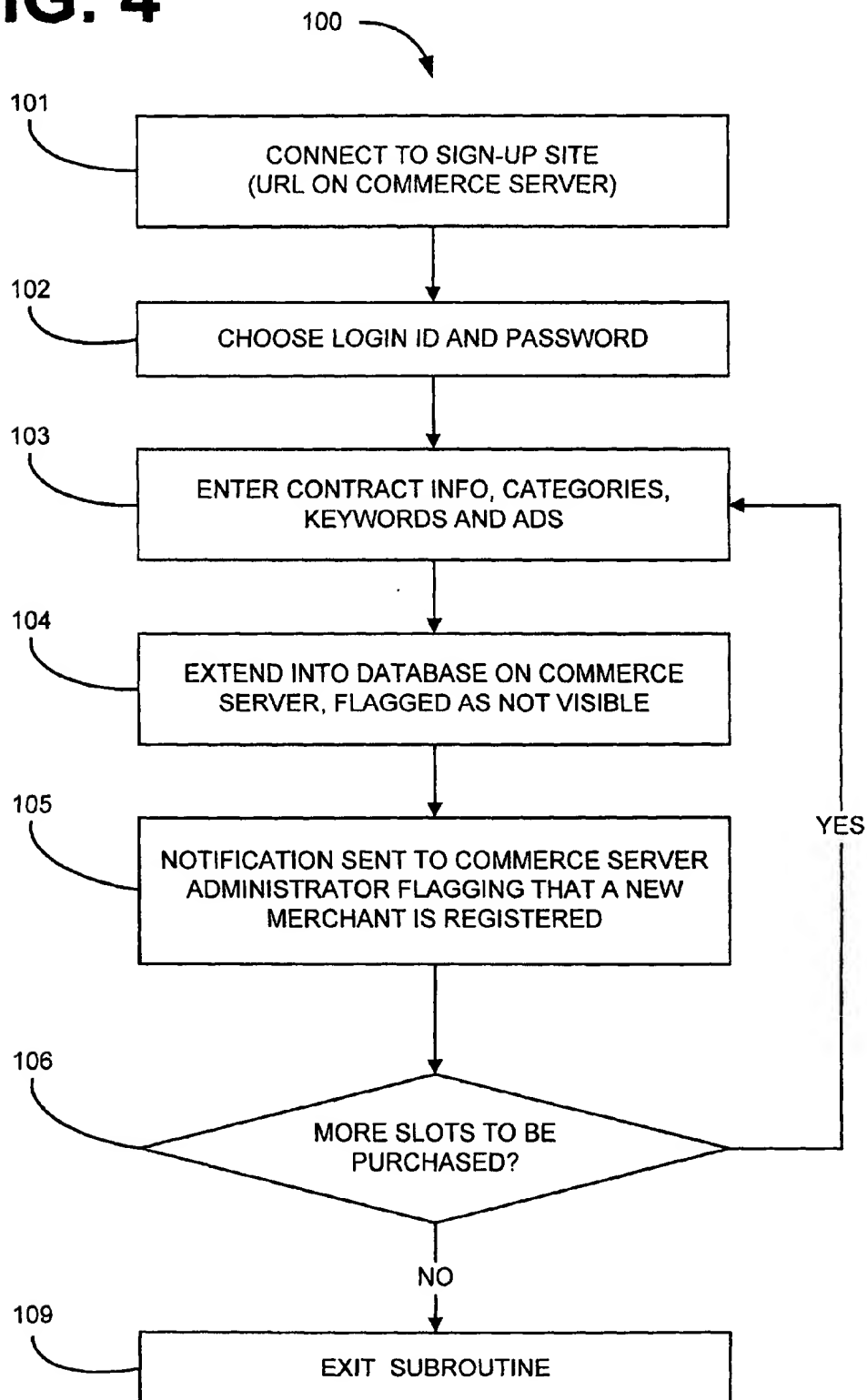


FIG. 5

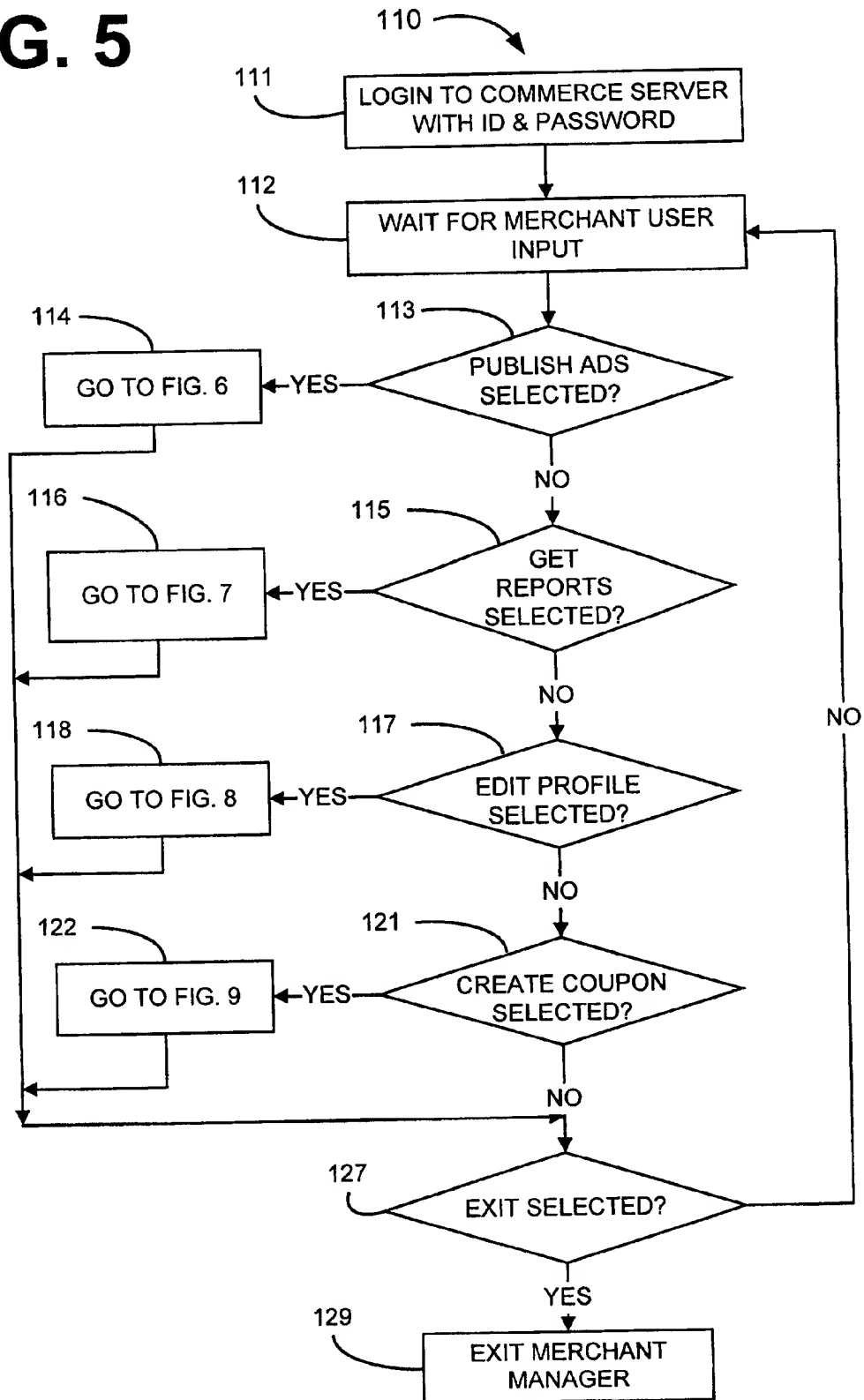


FIG. 6

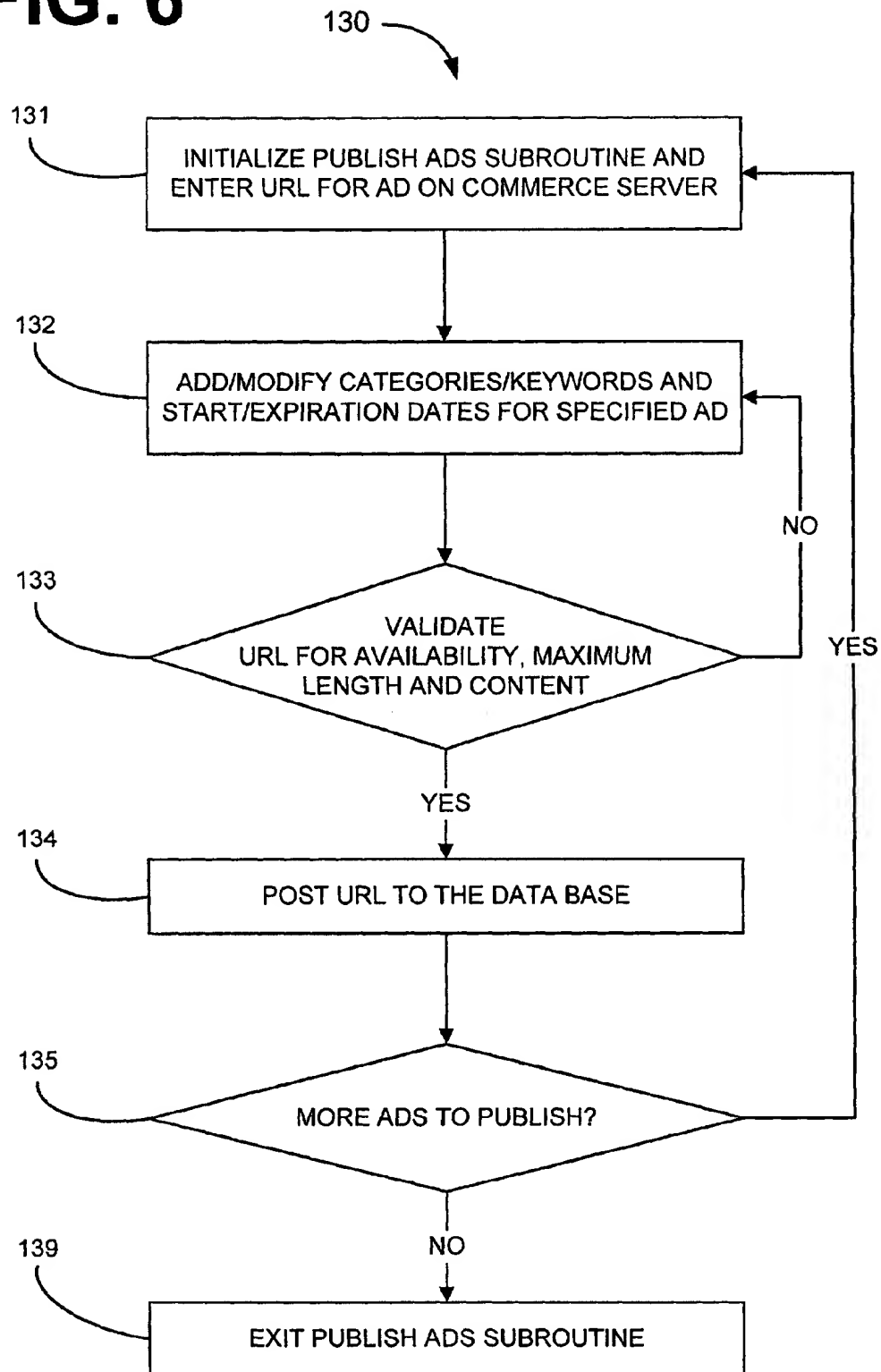


FIG. 7

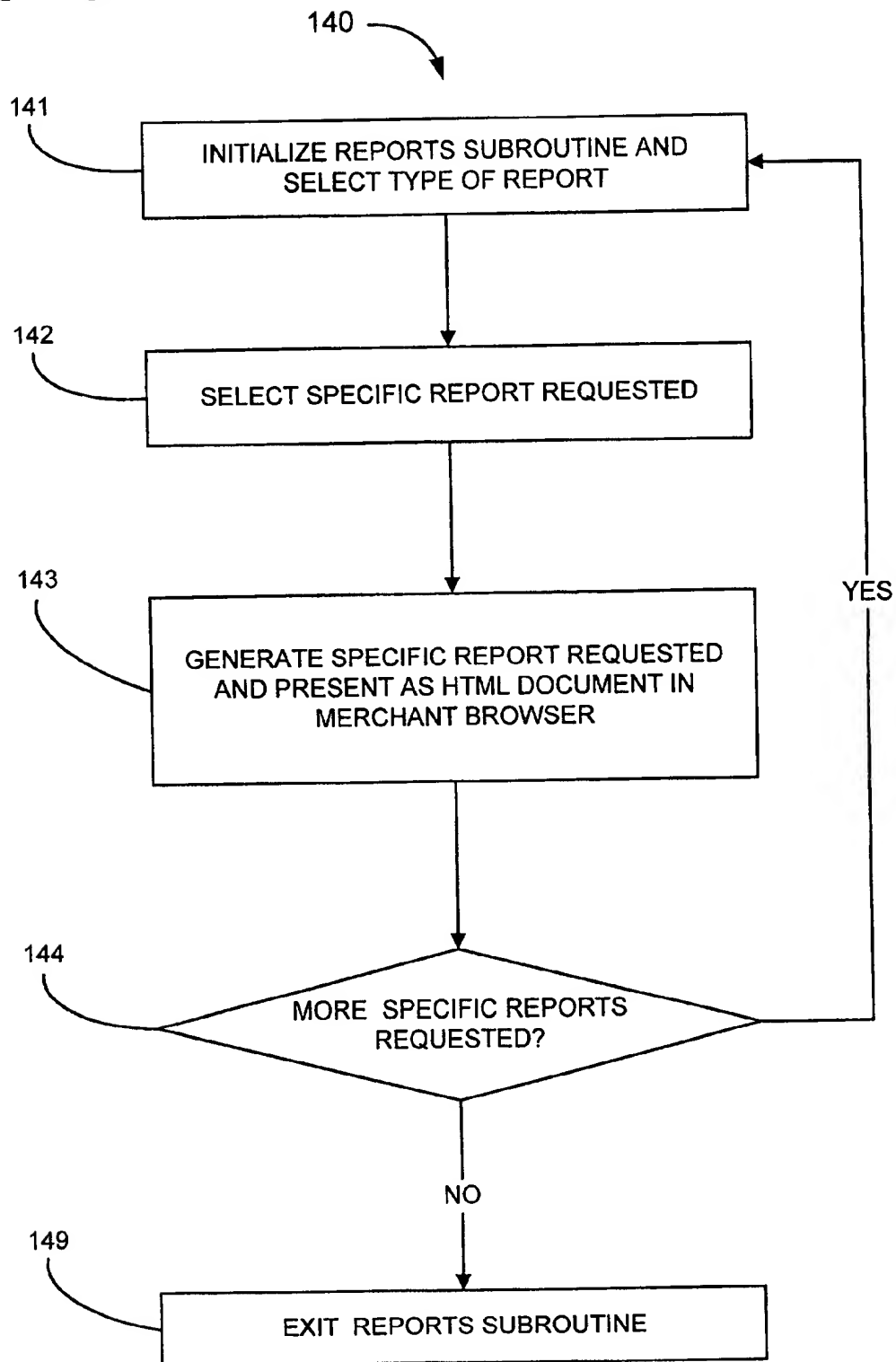


FIG. 8

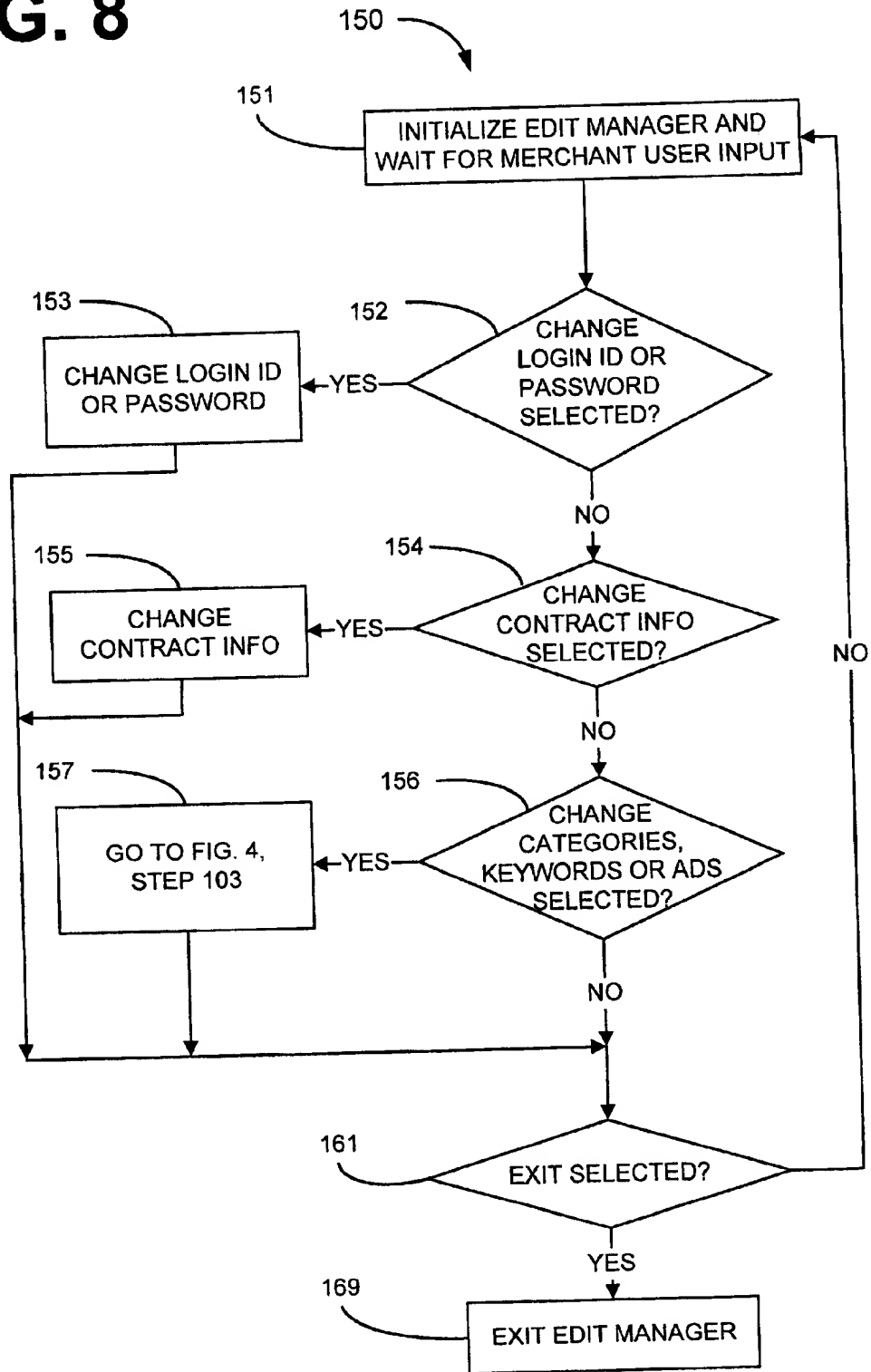


FIG. 9

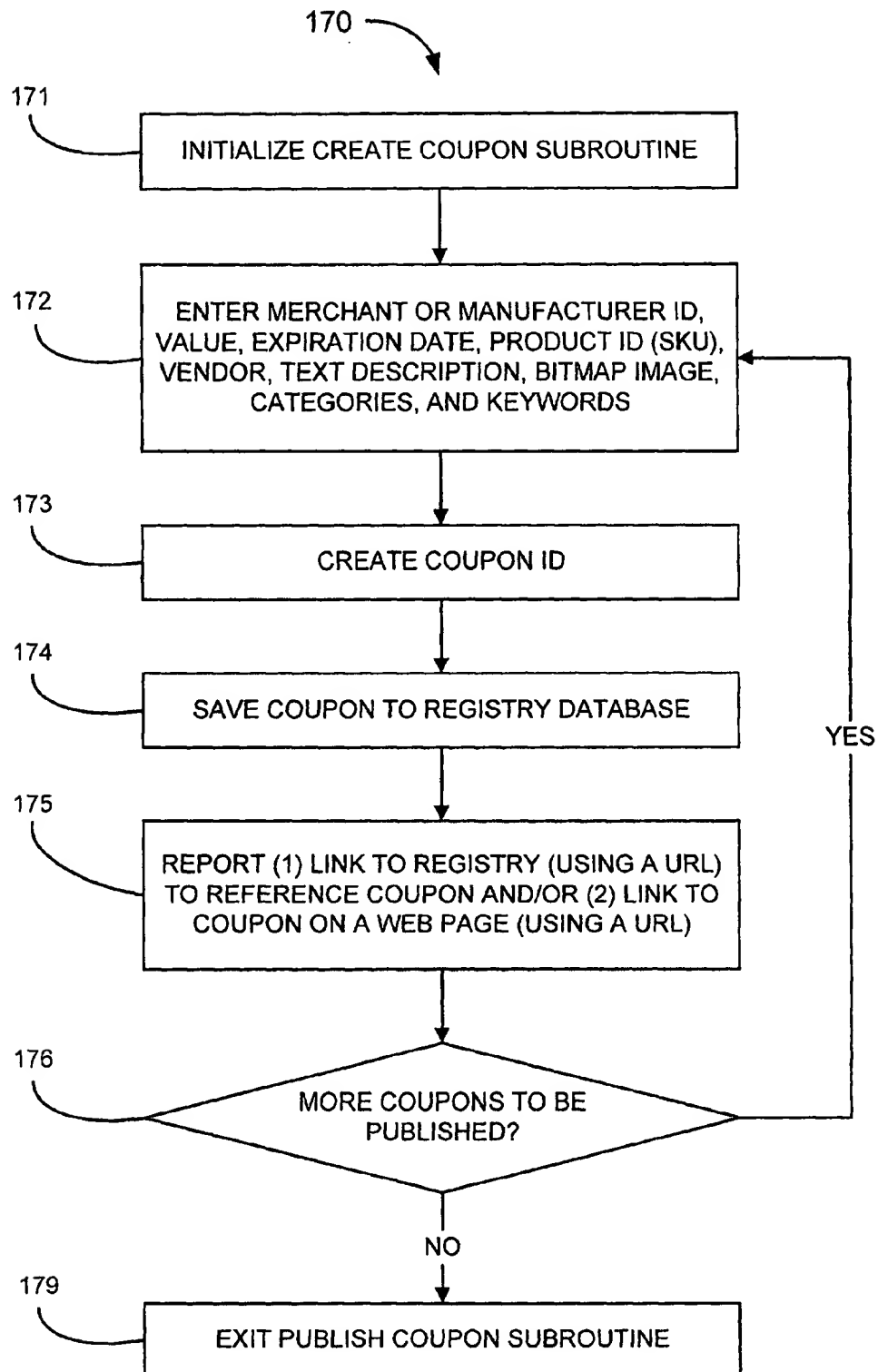


FIG. 10

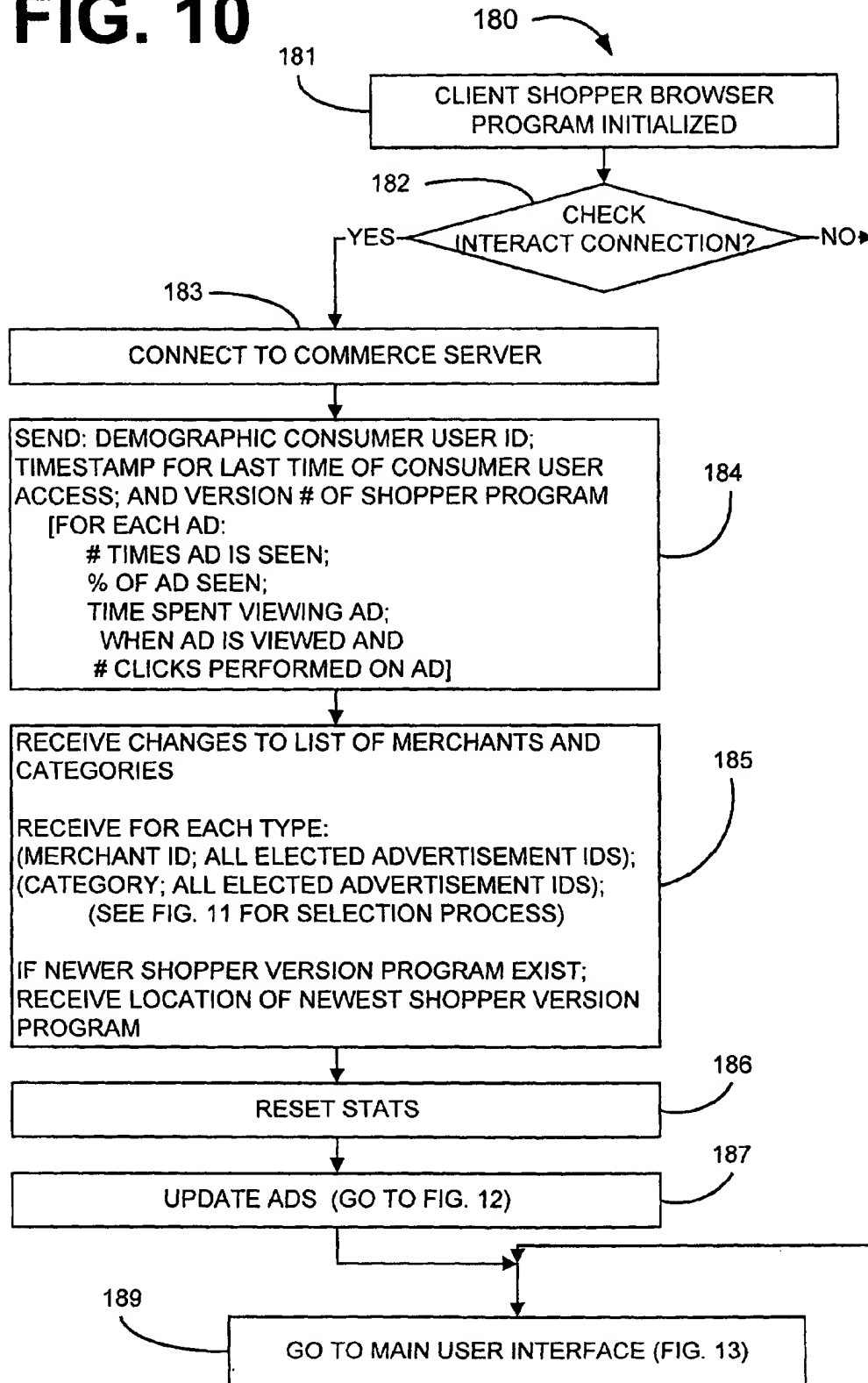


FIG. 11

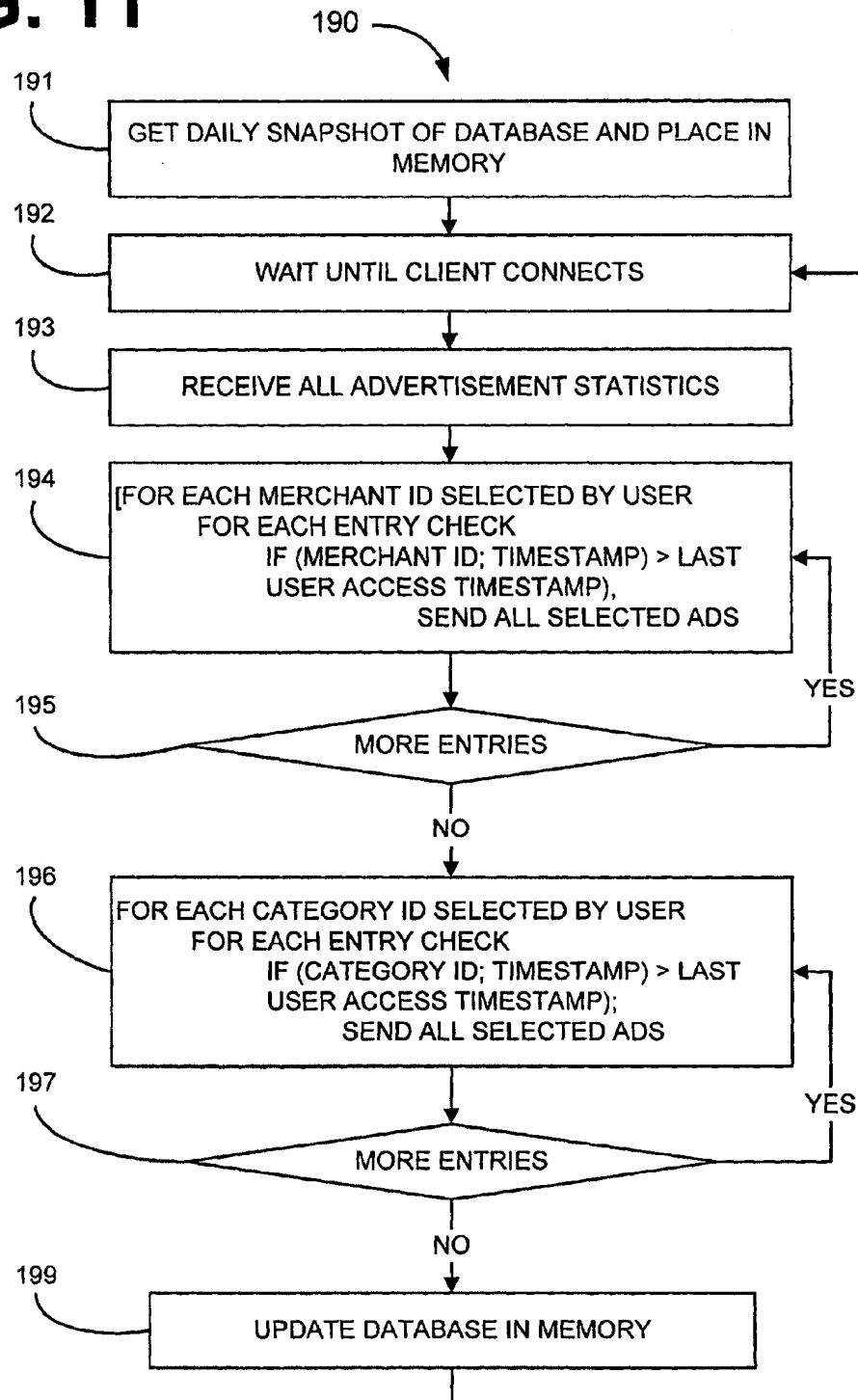


FIG. 12

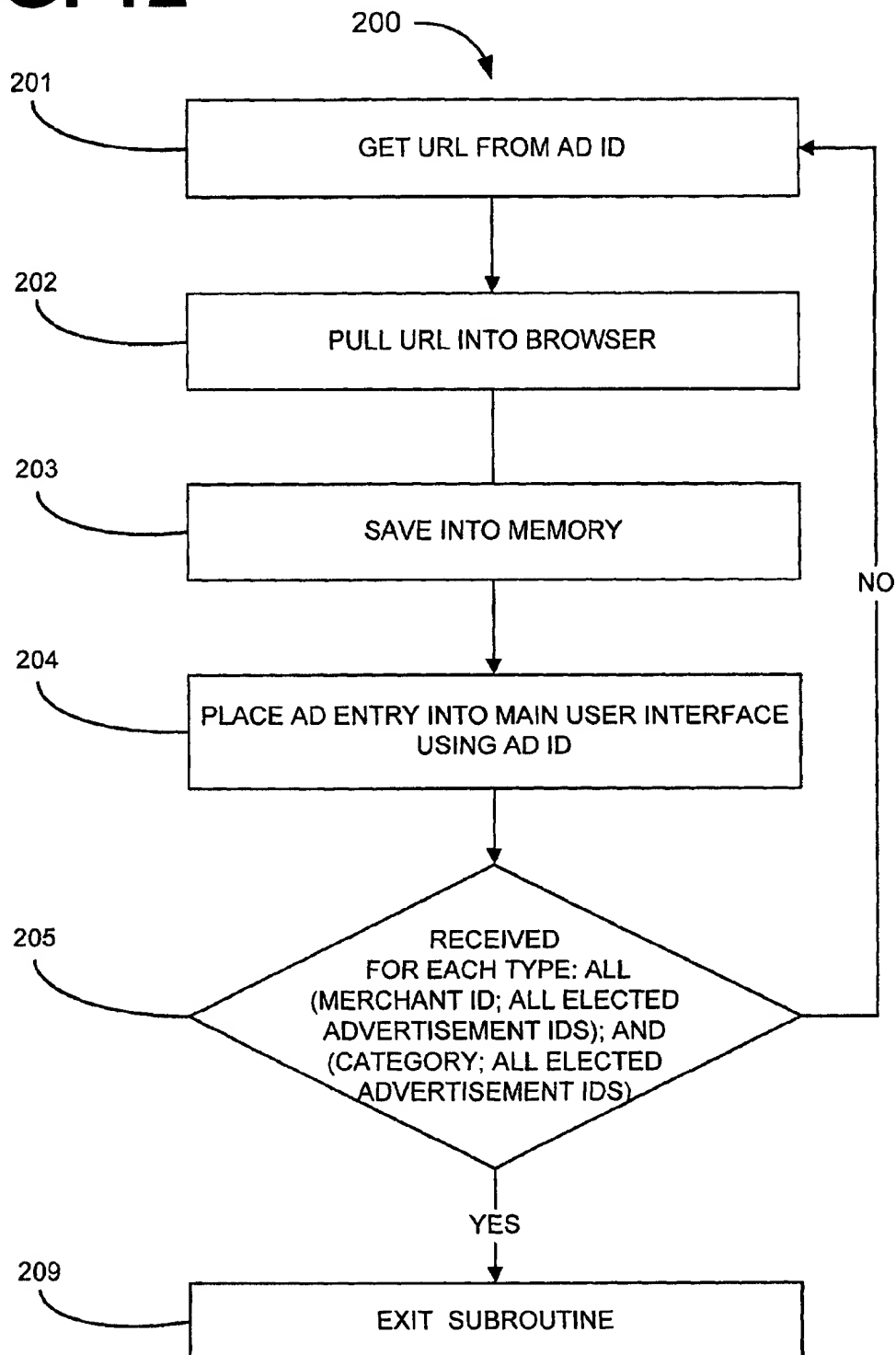


FIG. 13

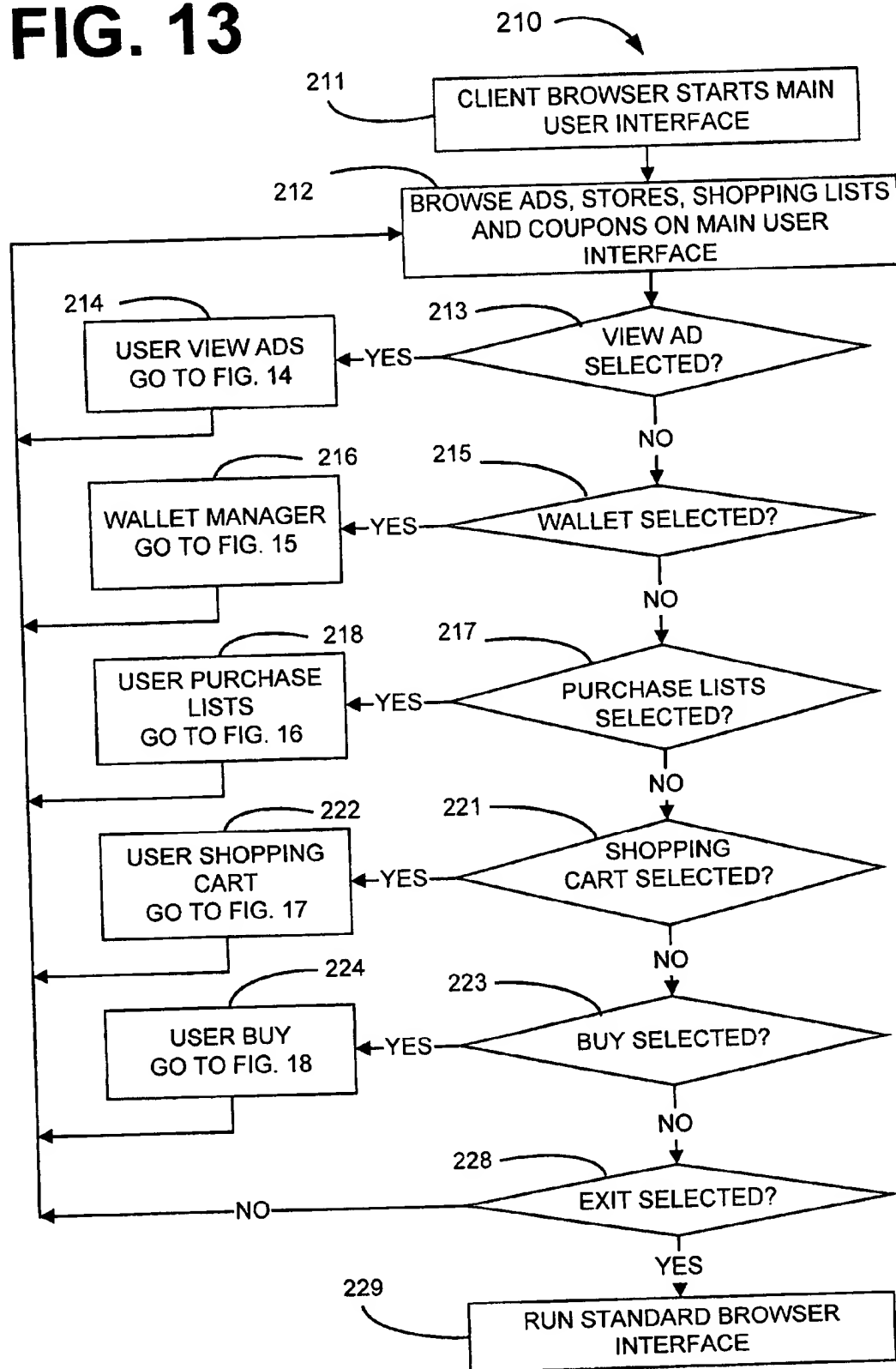


FIG. 14

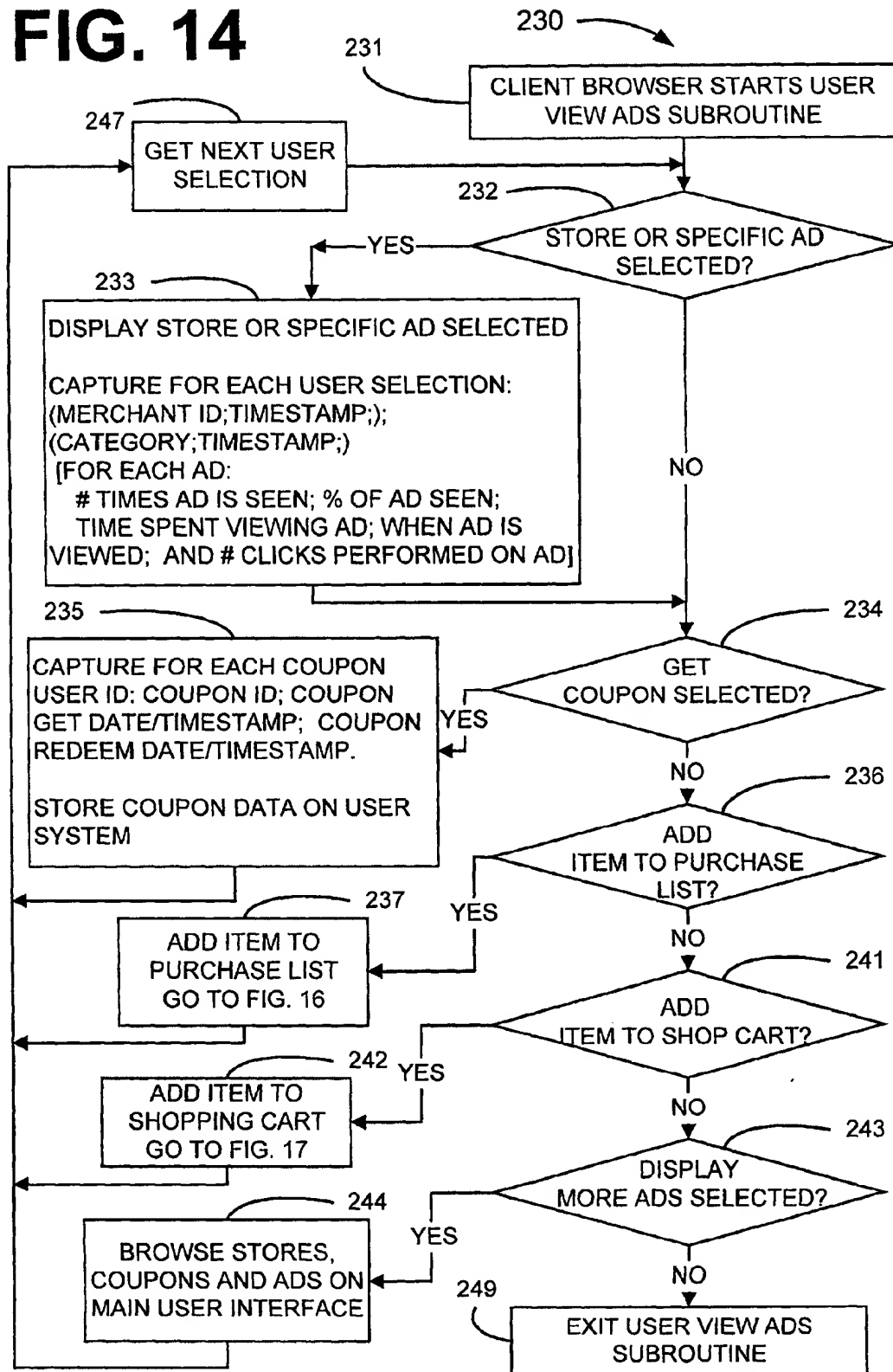


FIG. 15

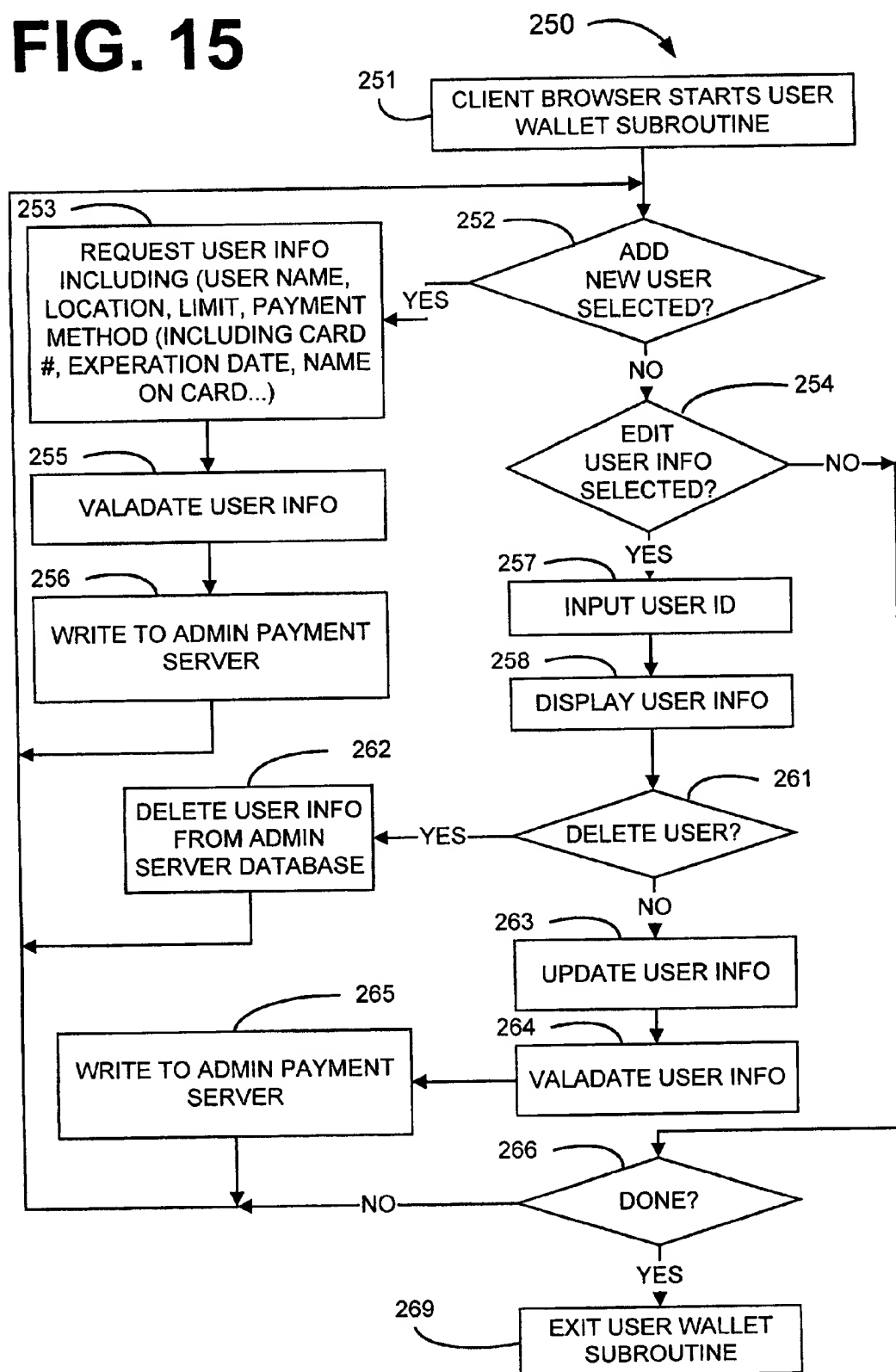


FIG. 16

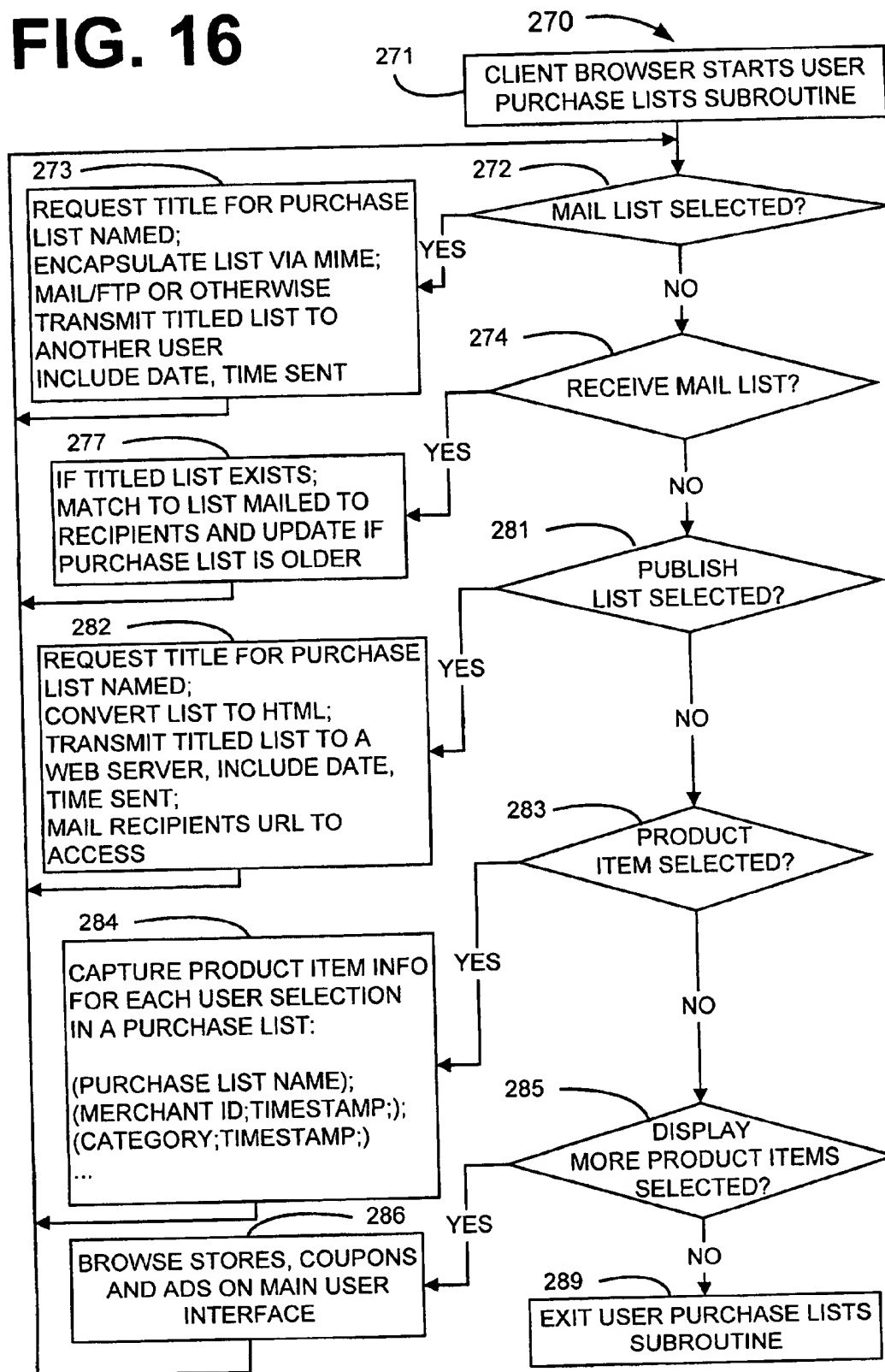


FIG. 17

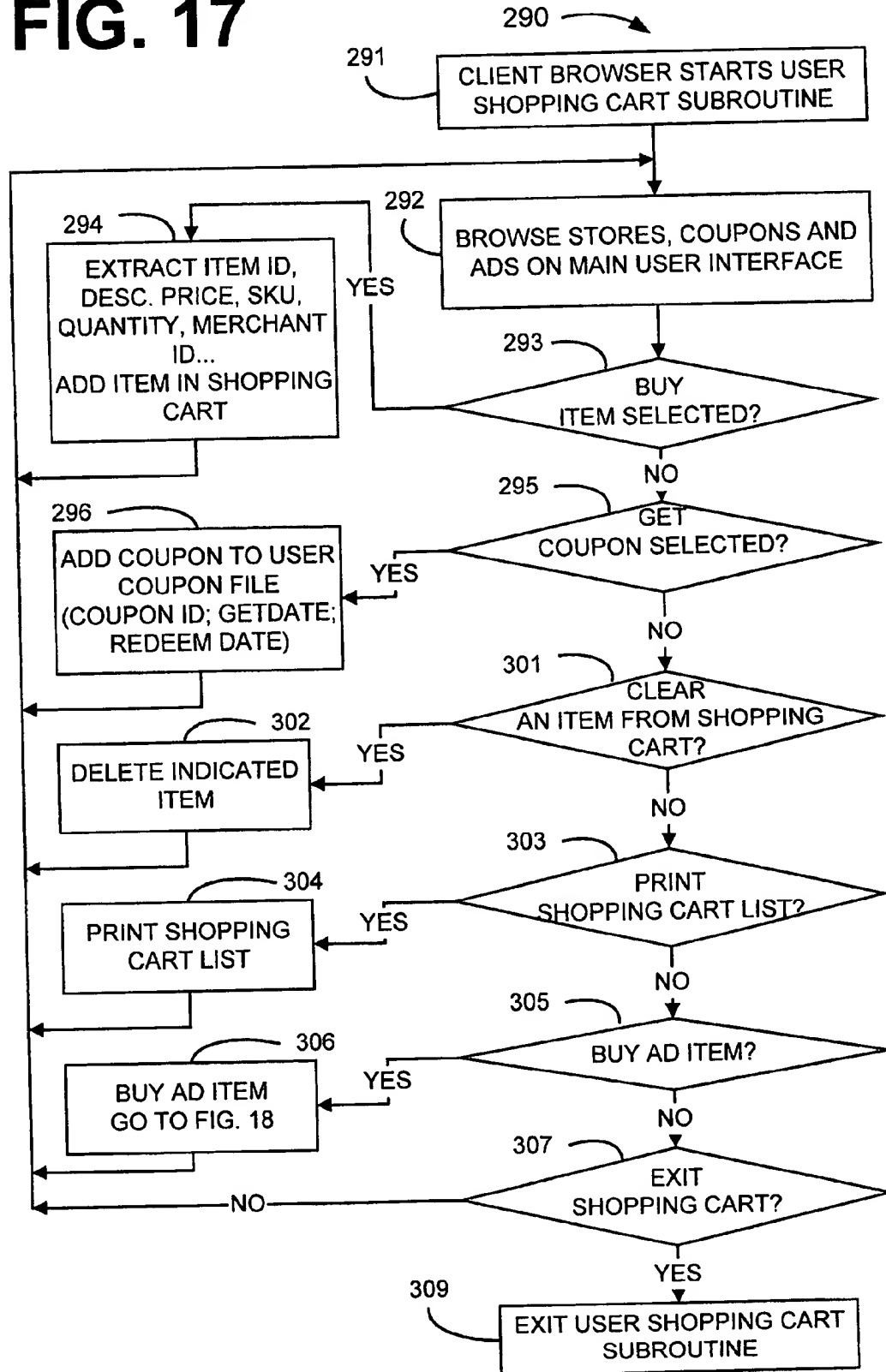


FIG. 18

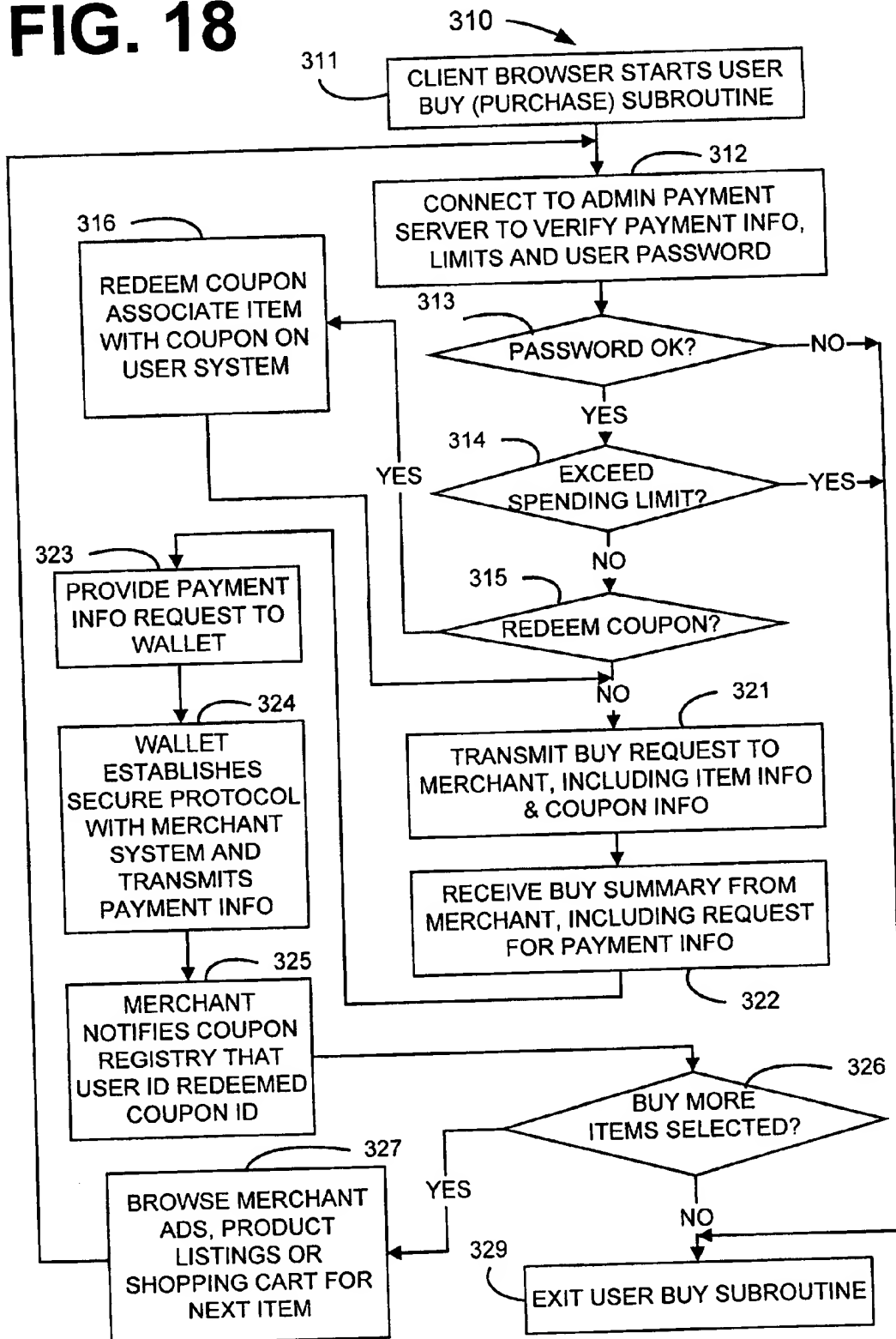


FIG. 19

340

FILE

EDIT

VIEW

GO

FAVORITES

HELP

BACK FORWARD STOP REFRESH HOME SEARCH FAVORITES PRINT

ADDRESS : DOCUMENT.DOC

STORES

SPECIALS

IDEAS

PURCHASES

SHOPPING CART

STORE 341

THE DIZZY STORE ONLINE

BARNES AND MOBLE

1 800 FLOWERS

AD DESCRIPTION 342

ITEMS ON SALE FOR 50% OFF

SUMMER BOOK BLAST

SPECIAL SPRING BOUQUET

ISSUED 343

5/1/98

5/1/98

4/1/98

EXPIRES 344

12/1/98

8/1/98

6/1/98

ADVERTISEMENT 345

BOOK #1

BY MS. YYY

PRICE \$ XX.XX

BOOK #2

BY MS. YYY

PRICE \$ XX.XX

BOOK #3

BY MS. YYY

PRICE \$ XX.XX

FIG. 20

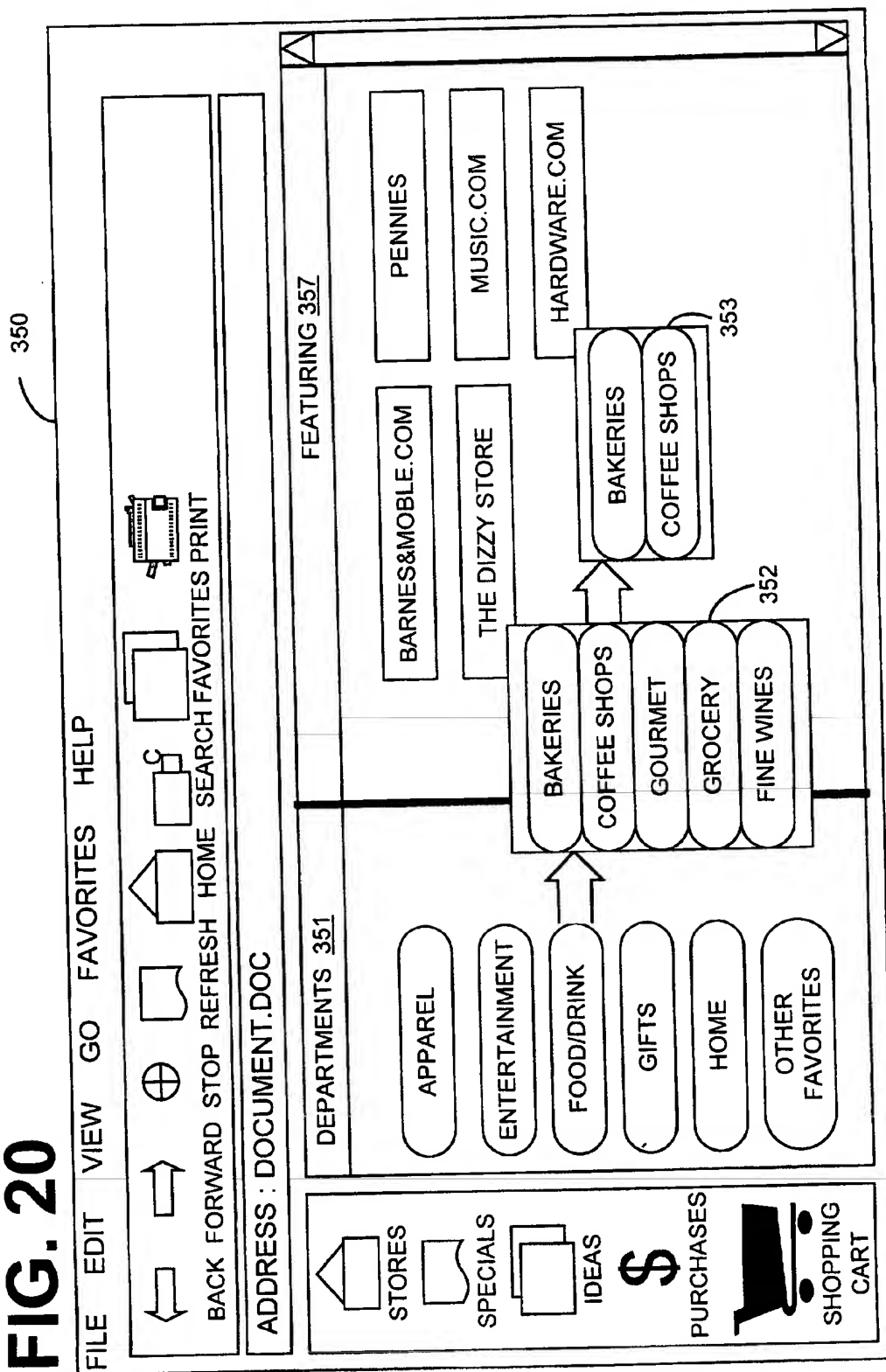


FIG. 21

360

FILE EDIT VIEW GO FAVORITES HELP

BACK FORWARD STOP REFRESH HOME SEARCH FAVORITES PRINT

ADDRESS : DOCUMENT.DOC

BUY <u>361</u>	SUBSET <u>362</u>	QUANTITY <u>363</u>	ITEM <u>364</u>
<input checked="" type="checkbox"/>		5	WIDGETS ITEMS ON SALE FOR 50% OFF
<input checked="" type="checkbox"/>		2	SUMMER BOOKS
<input checked="" type="checkbox"/>		2	SPECIAL SPRING BOUQUET

STORES
 COUPONS
 CATALOGS

PURCHASES
 NOTES

FIG. 22

370

10.22

FILE EDIT VIEW GO FAVORITES HELP

BACK FORWARD STOP REFRESH HOME SEARCH FAVORITES PRINT

ADDRESS : DOCUMENT.DOC

STORES

SPECIALS

IDEAS

PURCHASES

SHOPPING
CART

LISTS INDICATOR 371			COST 375	MORE NOTES 376
BUY 372	NOTES 373	LOCATION 374		
<input checked="" type="checkbox"/>	NEC 1280X1024@65HZ	MICRO WAREHOUSE	479.95	
<input checked="" type="checkbox"/>	SONY	HARMONY COMPUTERS	529.00	
<input checked="" type="checkbox"/>	VIEWSONIC	PCZONE	399.95	

FIG. 23

380

FILE

EDIT

VIEW

GO

FAVORITES

HELP

BACK

FORWARD

STOP

REFRESH

HOME

SEARCH

FAVORITES

PRINT

ADDRESS : DOCUMENT.DOC

NOTE 381	DATE 382	MERCHANT 383	COST 384	DESCRIPTION 385	CREDIT CARD 386
	4/1/98	MICRO WAREHOUSE	479.95	NEC 1280X1024@65HZ	CORP. AMEX
	3/23/98	SONY	529.00	HARMONY SCREEN	PERSONAL AMEX
	3/22/98	PCZONE	399.95	VIEWSONIC	PERSONAL VISA

STORES
 COUPONS
 CATALOGS
 PURCHASES
 NOTES

FIG. 24








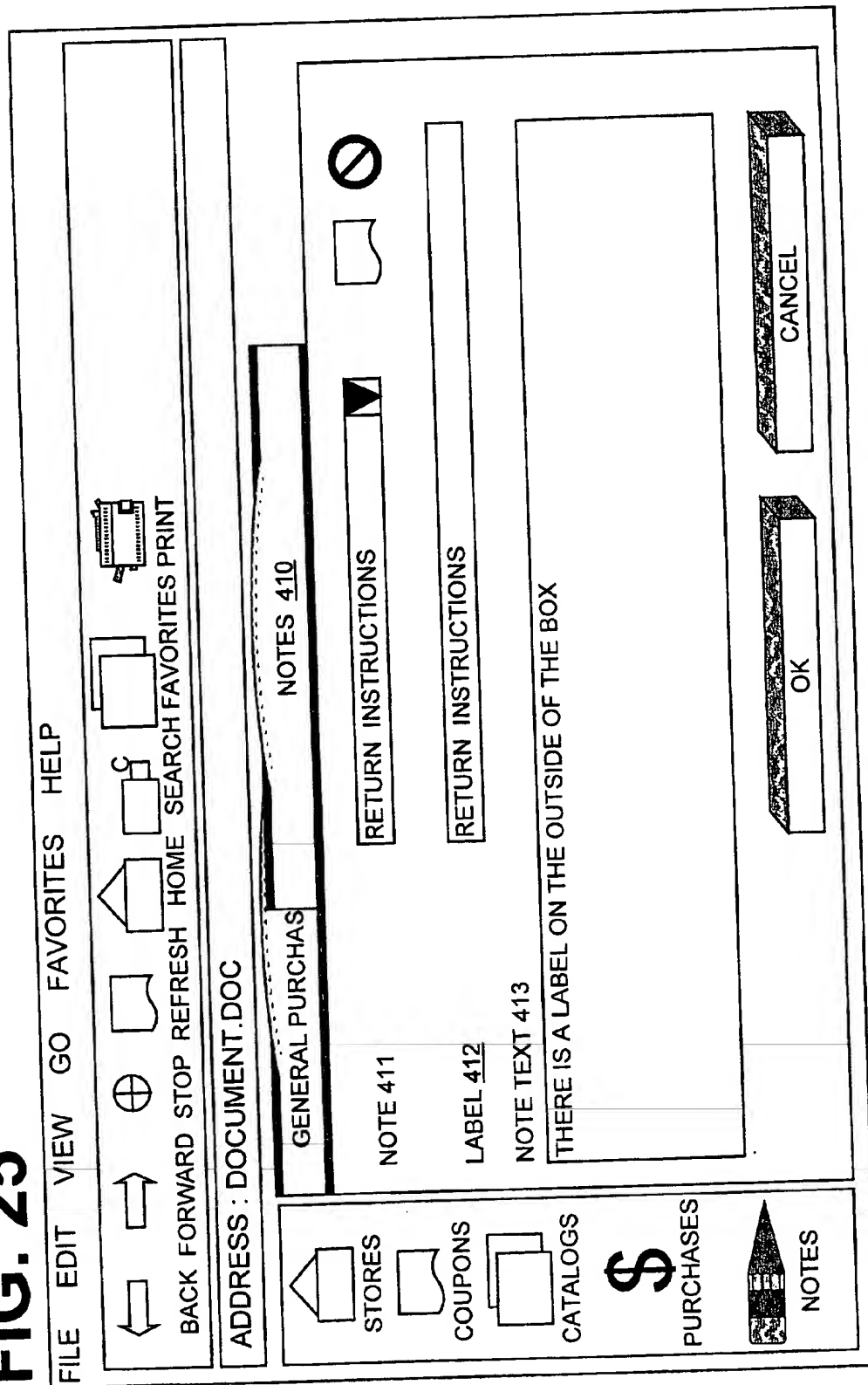
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<p>MERCHANT <u>403</u></p>	<p>MICRO WAREHOUSE</p>
<p>DESCRIPTION <u>404</u></p>	<p>NEC 1280X1024@65HZ</p>
<p>SHIPPING STATUS <u>405</u></p>	<p>RECEIVED</p>
<p>CREDIT CARD <u>407</u></p>	<p>CORP. AMEX</p>
<p>AMOUNT <u>402</u></p>	<p>479.95</p>
<p>STORES</p>	<p>GET STATUS <u>406</u></p>
<p>COUPONS</p>	<p>OK</p>
<p>CATALOGS</p>	<p>CANCEL</p>
<p>PURCHASES</p>	
<p>NOTES</p>	

FIG. 25



SYSTEM AND METHOD FOR PUBLISHING, DISTRIBUTING AND REDEEMING COUPONS ON A NETWORK

CROSS REFERENCE TO RELATED APPLICATION

[0001] This application is a continuation-in-part of application entitled "Apparatus and Method for a Merchant-to-Consumer Advertisement Communication System," Ser. No. 09/151,498, filed Sep. 11, 1998, and application entitled "Apparatus and Method for Linking Browser Bars With Active Documents for a Browser," Ser. No. 09/149,775, filed Sep. 8, 1998, now pending and incorporated herein by reference.

[0002] This application is related to co-pending applications entitled "System and Method for a Distributed Electronic Payment System," Attorney Docket No. 10981424, Ser. No. 09/XXX,XXX, filed Nov. XX, 1998, "System and Method for a Client-Based Electronic Shopping Cart System," Attorney Docket No. 10981425, Ser. No. 09/XXX,XXX, filed Nov. XX, 1998, "System and Method for Creating and Sharing Purchasing Lists on a Network," Attorney Docket No. 10981426, Ser. No. 09/XXX,XXX, filed Nov. XX, 1998, "System and Method for an Integrated Electronic Purchasing Shopper System," Attorney Docket No. 10981423, Ser. No. 09/XXX,XXX, filed Nov. XX, 1998, now pending and incorporated herein by reference.

BACKGROUND OF THE INVENTION

[0003] 1. Field of the Invention

[0004] The present invention generally relates to computers and software, and more particularly, to a system and method for publishing, distributing and redeeming coupons on a network system.

[0005] 2. Related Art

[0006] As known in the art, the Internet is a world-wide collection of networks and gateways that use the Transmission Control Protocol/Internet Protocol suite of protocols to communicate with one another. At the heart of the Internet is a backbone of high speed data communication lines between major nodes or host computers consisting of thousands of commercial, government, educational, and other computer systems that route data and messages.

[0007] World Wide Web (WWW) refers to the total set of interlinked hypertext documents residing on hypertext transfer protocol (HTTP) servers all around the world. Documents on the WWW, called pages or web pages, are written in hypertext mark-up language (HTML) identified by uniform resource locators (URL) that specify the particular machine and pathname by which a file can be accessed and transmitted from node to node to the end user under HTTP. A web site is a related group of these documents and associated files, scripts, subprocedures, and databases that are served up by an HTTP server on the WWW.

[0008] Users need a browser program and an Internet connection to access a web site. Browser programs, also called "web browsers," are consumer applications that enable a user to navigate the Internet and view HTML documents on the WWW, another network, or the user's computer. Web browsers also allow users to follow codes

called "tags" embedded in an HTML document, which associate particular words and images in the document with URLs so that a user can access another file that may be half way around the world, at the press of a key or the click of a mouse.

[0009] One type of document that consumers access is merchant advertisements. The recent rapid growth of information applications on international public packet switch computer networks, such as the Internet, suggests that public computer networks have the potential to establish a new kind of open marketplace for goods and services. As web pages are used internationally, it is highly desirable for manufacturers and merchants to be able to advertise their goods and services to as many potential customers as possible. Currently, on the Internet the primary way to advertise is through the use of advertisement banners that consist of trademarks, text, buttons or images comprised of hyperlinks, which transport a user to a particular website to access information regarding goods and services.

[0010] Unfortunately, as the Internet provides public access to advertisements and allows purchases on a merchant's server, this access has not allowed the merchant to publish, verify and redeem a coupon during the electronic purchases. Until now, network systems have lacked the ability to provide electronic purchasing and electronic coupon redemption to consumers, and still preserve the ability of the merchant to track the utilization of the electronic coupons for each customer and ensure a customer may utilize a coupon for a particular purchase only once.

SUMMARY OF THE INVENTION

[0011] The present invention is generally directed to an apparatus and method for publishing, distributing and redeeming coupons on a network system.

[0012] In general, the apparatus and method are implemented as follows. A merchant server provides the merchant the ability to transmit requests to create a coupon, and transmit coupon data regarding the coupon creation. A commerce server receives the requests to create a coupon, and receives the coupon creation data. The commerce server saves the coupon data to a coupon database, and provides access to the coupon to customers on the network. A merchant server further provides the merchant the ability to receive a request for purchasing an item, and a request for redeeming a coupon for that purchase from a consumer. The merchant server verifies the coupon is a valid coupon, and allows the coupon to be redeemed in the purchase of the item if the coupon is valid. The merchant server upon redemption of the coupon, updates a coupon database to record that the coupon has been redeemed by the customer.

[0013] In accordance with another embodiment of the present invention, the commerce server also provides for interaction with the merchant, allowing the merchant to sign up and register, as well as to purchase coupon slots for specific products, and associated keywords with those coupons.

[0014] In accordance with another embodiment of the present invention, the commerce server also provides merchants with the ability to get reports based upon the statistics collected from the consumer access to the merchants coupons.

[0015] In accordance with another embodiment of the present invention, the merchant is provided with a means to publish coupons on the commerce server via the World Wide Web.

[0016] In accordance with yet another embodiment of the present invention, the commerce server provides a centrally managed site for merchant coupon information that is accessible worldwide by consumers.

[0017] In accordance with yet another embodiment of the present invention, the commerce server keeps current coupon information available so that consumers can access the commerce server and retrieve only coupons from particular merchants and, optionally, in particular product categories.

[0018] In yet another embodiment of the present invention, the consumer user interface program supports the ability of the consumer to search for merchant coupons or product coupons based on keywords and store names.

[0019] In accordance with yet another embodiment of the present invention, the consumer user interface browser program provides the consumer with the ability to perform secure electronic purchasing and coupon redemption on the Internet. This secure Internet purchasing and coupon redemption is enabled by integrating the wallet's electronic payment methods with the consumer user program to provide for management of credit card payments.

[0020] In accordance with yet another embodiment of the present invention, the consumer user interface browser program provides for the publishing, distributing, and the redeeming of electronic coupons for electronic purchases. The electronic coupon mechanism provides for efficient operation by insuring that only one user may utilize a coupon for a particular purchase only once.

[0021] In accordance with yet another embodiment of the present invention, the consumer user interface browser program allows the consumer to collect and store copies of electronic coupons for future redemption.

[0022] All of the foregoing embodiments are believed to be separate patentable inventions and there are others not specifically listed for brevity.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023] The accompanying drawings incorporated in and forming a part of the specification illustrate several aspects of the present invention, and together with the description, serve to explain the principles of the invention. Note that in the drawings, like reference numerals designate corresponding parts throughout the several views. In the drawings:

[0024] FIG. 1 is a block diagram of a consumer/server system utilizing the Internet in accordance with the present invention.

[0025] FIG. 2 is a block diagram of a commerce server, merchant server and consumer shopper system of the present invention.

[0026] FIG. 3A is a block diagram illustrating a browser program situated within a computer readable medium, e.g., in memory of a computer system of the consumer systems.

[0027] FIG. 3B is a block diagram of the distributed shopper system components in a commerce server, merchant server and consumer shopper system of the present invention.

[0028] FIG. 4 is a flow diagram of the merchant sign-up and slot purchase process for the merchant server application of the present invention, as shown in FIGS. 1 and 2.

[0029] FIG. 5 is a flow diagram of the ongoing operation process for the commerce server with the merchant server web site of the present invention, as shown in FIGS. 1 and 2.

[0030] FIG. 6 is a flow diagram of the advertisement publishing process for the consumer server of the present invention, as shown in FIG. 5.

[0031] FIG. 7 is a flow diagram of the report generation process for the consumer server of the present invention, as shown in FIG. 5.

[0032] FIG. 8 is a flow diagram of the edit profile process for the commerce server of the present invention, as shown in FIG. 5.

[0033] FIG. 9 is a flow diagram of the coupon creation process for the merchant server of the present invention as shown in FIG. 5.

[0034] FIG. 10 is a flow diagram of the consumer application process for the consumer user browser process of the present invention, as shown in FIGS. 1, 2 and 3.

[0035] FIG. 11 is a flow diagram of the statistical information capture process for the commerce server of the present invention, as referenced in FIG. 10.

[0036] FIG. 12 is a flow diagram of the advertisement download process for the consumer user browser program process of the present invention, as shown in FIGS. 2 and 3.

[0037] FIG. 13 is a flow diagram of the main user interface process for the consumer user browser program process of the present invention, as shown in FIG. 2 and 3.

[0038] FIG. 14 is a flow diagram of the advertisement viewing process for the consumer user browser program process of the present invention, as shown in FIG. 13.

[0039] FIG. 15 is a flow diagram of the user wallet process with consumer user browser program process of the present invention, as shown in FIG. 13.

[0040] FIG. 16 is a flow diagram of the user purchase list process for the consumer user browser program process of the present invention, as shown in FIG. 13.

[0041] FIG. 17 is a flow diagram of the shopping cart process for the consumer user browser program process of the present invention, as shown in FIG. 13.

[0042] FIG. 18 is a flow diagram of the user electronic purchase process for the consumer user program process of the present invention, as shown in FIG. 13.

[0043] FIG. 19 is an illustration of an example screen display for merchant advertisements as referenced in FIG. 13.

[0044] FIG. 20 is an illustration of an example screen display for store products as referenced in FIG. 13.

[0045] FIG. 21 is an illustration of an example screen display for a catalog list as referenced in FIG. 16.

[0046] FIG. 22 is an illustration of an example screen display for purchase list as referenced in FIG. 16.

[0047] FIG. 23 is an illustration of an example screen display for a shopping cart mechanism as referenced in FIG. 17.

[0048] FIG. 24 is an illustration of an example screen display of the consumer purchase process as referenced in FIG. 18.

[0049] FIG. 25 is an illustration of an example screen display for the user purchase process notes as shown in FIG. 18.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0050] The present invention will now be described in detail with specific reference to the drawings. While the invention will be described in connection with these drawings, there is no intent to limit it to the embodiment or embodiments disclosed therein. On the contrary, the intent is to cover all alternatives, modifications, and equivalents included within the spirit and scope of the invention.

[0051] Turning now to the drawings, FIG. 1 is a block diagram of just one example of a system configuration, wherein the present invention may be implemented, that illustrates the flexibility, expandability, and platform independence of the present invention. While the system configuration could take many forms, the diagram of FIG. 1 illustrates a plurality of diverse consumer workstations 12 and 13, directly connected to a network, for example, but not limited to, a local area network (LAN) 18. Additional workstations 14 and 15 may similarly be remotely located and in communication with the network 18 through a dial-in or other suitable connection 16. Each of the workstations 12, 13, 14 and 15 in FIG. 1 are illustrated to emphasize that the system workstations may comprise a diverse hardware platform.

[0052] As is well known, browser applications are provided and readily available for a variety of hardware platforms. Browsers are most commonly recognized for their utility for accessing information over the Internet 22.

[0053] As aforementioned, a browser is a device or platform that allows a user to view a variety of service collections. The browser retrieves information from a network server 21 using HTTP, then interprets HTML code, formats, and displays the interpreted result on a workstation display.

[0054] Additional servers 23 and 26 provide for access to web pages on the Internet. Web commerce server 23 and database 24 communicate on a LAN 25. LAN 25 may be, for example, an Ethernet-type network, also known as 10 BASE 2, 10 BASE 5, 10 BASE T, BASE BAN network, a COAX cable network, or the like. Merchant server 26 provides access to specific merchant web pages that include, but are not limited to, advertisements including specific merchandise information, ordering data, inventory data, shipping data, and customer support access.

[0055] Illustrated in FIG. 2 is the architecture of the shopper system 10, including the consumer system 12, commerce server 23, and merchant server 26.

[0056] The commerce server 23 provides a central site for merchant advertisement and item purchase information

available to the users. The commerce server 23 administrates the merchant advertisement and purchase item registration, the keywords to search for the merchant advertisements or items, and categories for the merchant advertisement or purchase items. The commerce server 23 acts as an interface between the merchant server 26 and the client shopper 12. The commerce server also keeps the latest advertisement information for access by the shopper user 12. The commerce server supports searching merchant advertisements and purchase items based on keywords, store names, and coupons. The commerce server 23 also allows the merchant to track user advertisement access and the statistics with regard to utilization of the merchant advertisements.

[0057] The merchant server 26 includes the merchant shopper system 70 of the present invention. The merchant server 26 enables users to construct purchase/transaction logs of purchases acquired from each merchant 26.

[0058] The merchant server 26 also publishes merchant specific advertisements to commerce server 23 via a network such as, but not limited to, the worldwide web. The merchant server 26 allows the merchant to publish, track and redeem coupons. The merchant server 26 also provides for a user interface for user shopper 12 interface with merchant customer support. The merchant 26 also enables catalog and shopping cart functionality by providing information with regard to items selected by either advertisement or search for placement into a purchased list or shopping cart. The merchant 26 also provides for a secure user shopper payment method.

[0059] The consumer shopper system 70 provides a mechanism to the user to register and list merchant advertisement and sales items by category and keyword. The consumer shopper system 70 also provides the user the ability to search merchant advertisements and purchase items by keyword, category and store name. The consumer shopper system 70 provides the ability to identify and display advertisements and items from featured merchants. The consumer shopper system 70 provides the mechanism to allow the user to decide what merchant advertisements to access and further allows the user to subscribe to specific advertisements or advertisements with a particular category of interest to be received. The consumer shopper system 70 accomplishes a subscription by filtering merchant advertisements and messages by category and keyword. The consumer shopper system 70 further tracks user statistics on advertisement effectiveness to the merchant. The consumer shopper system 70 also provides the consumer a local shopping cart to provide for comparison shopping and the ability to perform electronic purchasing. The consumer shopper system 70 is integrated with the MS wallet or Verifone for management of credit card payments. The consumer shopper system 70 also provides the consumer with the ability to create shopping lists and to export those shopping lists and receive updates. The consumer shopper system 70 also provides the ability to attach notes to items in both the shopper catalog list and shopping cart. The consumer shopper system 70 automatically creates a purchase log containing information specific with a user purchase and the ability to attach notes to items in the purchase log.

[0060] In utilizing the purchase logs, the consumer shopper system 70 provides purchasing and tracking reports to

the consumer. The consumer shopper system 70 also provides the ability to a user to subscribe and flag favorites and subscribe to stores of interest. The consumer shopper system 70 enables a consumer to communicate with stores' customer service departments via a chat function. The foregoing functionality resides in the commerce server 23, merchant server 26, and user computer system 12, which are herein defined with further detail in FIGS. 3 through 25 and are described hereafter.

[0061] FIG. 3A shows an example of a computer system 12 and 26 architecture, wherein the consumer or merchant shopper system 70 of the present invention may be implemented. As illustrated in FIG. 3, the computer system 12, 26 generally includes a browser program 65 (e.g., Netscape Navigator, Internet Explorer, or other browser program) for use in accessing locations on a network. These browser programs 65 reside in computer memory 51 (e.g., random access memory (RAM)) and/or nonvolatile storage device 42 (e.g., hard disk drive) and access communication facilities modem network card 47 to transport the user access to other resources connected to the network. In order to find a resource, the user should know the network location of the resource denoted by a network location identifier or URL. These identifiers are often cryptic, following very complex schemes and formats in their naming conventions.

[0062] The computer systems 12 and 26 identify, access, and process these resources desired by a user by using the processor 41, nonvolatile storage device 42, and memory 51 with an operating system 52 and window manager 53. The processor 41 accepts data from memory 51 and storage 42 over the local interface 43. Direction from the user can be signaled by using input devices, for example, a mouse 44 and a keyboard 45. The actions input and result output are displayed on a display terminal 46.

[0063] The first embodiment of the present invention involves the consumer shopper program 70. The consumer shopper program 70 is the software that interacts with the commerce and merchant servers to obtain the requested advertisement data and functionality requested by the consumer. The consumer shopper program 70 will be described hereafter in detail with regard to FIGS. 5 and 6.

[0064] Illustrated in FIG. 3B is the distributed process architecture of the shopper system 12 including the consumer system 12 commerce server 23 and merchant server 26. As noted with regard to FIG. 2 above, the commerce server 23 is the central site for the shopper system 12. The commerce server 23 includes the distributed portion of the commerce shopper system 70. The commerce server 23 shopper system 70 includes the distributed processor 100, herein defined with regard to FIG. 4; process 110, herein defined with regard to FIG. 5; process 130, herein defined with regard to FIG. 6; process 140, herein defined with regard to FIG. 7; process 150, herein defined with regard to FIG. 8; process 170, herein defined with regard to FIG. 9; process 180, herein defined with regard to FIG. 10; process 190, herein defined with regard to FIG. 11; process 200, herein defined with regard to FIG. 12; process 210, herein defined with regard to FIG. 13; process 230, herein defined with regard to FIG. 14; process 270, herein defined with regard to FIG. 16; and process 290, herein defined with regard to FIG. 17. The commerce server 23 distributed portion of the shopper system 70 includes a system and

method to interact with the consumer system 12 distributed portion of the shopper system 70 and the merchant server 26 distributed portion of the shopper system 70.

[0065] The consumer system 12 distributed portion of the shopper system 70 includes process 180, herein defined in further detail with regard to FIG. 10; process 190, herein defined in further detail with regard to FIG. 11; process 200, herein defined with regard to FIG. 12; process 210, herein defined in further detail with regard to FIG. 13; process 230, herein defined in further detail with regard to FIG. 14; process 250, herein defined in further detail with regard to FIG. 15; process 270, herein defined in further detail with regard to FIG. 16; process 290, herein defined in further detail with regard to FIG. 17; and process 310, herein defined in further detail with regard to FIG. 18.

[0066] The merchant server 26 distributed portion of the shopper system 70 includes the merchant sign-up and slot purchase process 100. The merchant server 26 distributed shopper system 70 also includes the commerce server 23 and merchant server 26 ongoing operation process 110, which is herein defined in further detail with regard to FIG. 5. The merchant server 26 distributed shopper system 70 further includes the report generation process 130, herein defined in detail with regard to FIG. 6. The merchant server 26 shopper system 70 also includes the advertisement publishing process 130, herein defined in further detail with regard to FIG. 6. Also included is the editing manager process 150 which is herein defined in further detail with regard to FIG. 8. The merchant server 26 distributed shopper system 70 also includes the user electronic purchase process 310 herein defined in further detail with regard to FIG. 18.

[0067] With the shopper system 10 being comprised of the distributed shopper system 70, it is contemplated by the inventors that the process mechanisms herein defined above can be utilized on any of the processing systems in the network. For example, the shopper system 10 distributed shopper system 70 can utilize the processing power of the commerce server 23 to provide processing of all consumer system 12 shopper system 70 functionality and allow the consumer system 12 to be a dumb or network terminal. It is also contemplated by the inventors that the merchant server 26 could also be a dumb or network terminal and provide for all the merchant server 26, shopper system 70 functionality process mechanisms to be implemented on the commerce server 23.

[0068] Illustrated in FIG. 4 is the flow diagram of the merchant sign-up and slot purchase process for the merchant application 100 of the present invention. The flow diagram of FIG. 4, as well as the flow diagrams of subsequent figures illustrate the architecture, functionality, and operation of the respective software that they are intended to represent. A merchant connects to the commerce server 23 to sign up at step 101. The merchant accomplishes this by utilizing the URL on the commerce server 23. The merchant then chooses a logon identification (ID) password and inputs this data into the commerce server 23. This logon ID password information is written to a file within database 24.

[0069] The merchant next enters the required contractual information, categories for the desired advertisement to be included in, and keywords for identifying the merchant advertisement in the advertisement itself at step 103. The commerce server 23 writes the contract information, cat-

egories for the included advertisement, keywords to search the included advertisement, and the merchant advertisement itself into database 24 at step 104. Next, the commerce server 23 generates and sends a notification to the commerce server administrator, indicating that a new merchant has been registered at step 105.

[0070] Then, the merchant is queried if the merchant wishes to purchase more advertisement slots at step 106. If the merchant wishes to purchase additional advertising slots, the process returns to step 103 to repeat the above steps 103 through 105. If the merchant declines to purchase additional slots at this time, the process then exits at step 109.

[0071] Illustrated in FIG. 4 is the flow diagram of the ongoing operation process for the commerce server 23 application with the merchant server website 26 of the present invention. The merchant logs into the commerce server 23 with the ID and password established in FIG. 4, step 102, at step 111. The commerce server 23 waits for the merchant user to input a request for data at step 112.

[0072] The data input is then tested to see if the merchant requests an advertisement to be published at step 113. If an advertisement is to be published, then the process goes to step 114 to execute the published advertisement routine herein further defined with regard to FIG. 6. After the commerce server 23 has published the advertisement at step 114, the commerce server 23 then proceeds to step 121. If the merchant has not selected to publish an advertisement, the commerce server 23 then checks if the merchant has selected a report at step 115.

[0073] If a report has been selected at step 115, the commerce server 23 then proceeds to step 116 to obtain the desired report which is herein defined in further detail with regard to FIG. 7. After retrieving the desired report at step 116, the commerce server then proceeds to step 121. If a report is not requested at step 115, the commerce server 23 then checks if the merchant has indicated that a profile edit is to be performed at step 117.

[0074] When a profile edit is to be performed, the commerce server 23 then proceeds to step 118 to process the edit profile procedure desired by the merchant which is herein further defined with regard to FIG. 8. After performing the desired profile edit at step 118, the commerce server then proceeds to step 121. If at step 117 the merchant has not selected to edit the profile, the commerce server then checks if exit of the normal operating procedure is requested at step 121.

[0075] If the exit is not selected at step 121, the commerce server then returns to step 112 for further processing. When an exit has been selected at step 121, the commerce server 23 then exits the merchant manager program at step 129.

[0076] Illustrated in FIG. 6 is the flow diagram of the advertisement publishing process for the commerce server 26 application of the present invention. The advertisement publication routine requests the URL for a particular advertisement on the commerce server 23 from the merchant at step 131. The commerce server 23 then checks the categories and/or keywords and the start and expiration dates for the specified advertisement to be published at step 132.

[0077] The commerce server 23 then validates the URL for availability, maximum length and acceptable content at

step 133. If the validation fails for availability, maximum length, acceptable content or other tests of the like, the commerce server 23 returns to step 132 to further modify the advertisement. If the commerce server 23 validates the advertisement at step 133, then the commerce server 23 posts the advertisement URL to the database 24 at step 134. The commerce server 23 tests if the merchant desires to publish more advertisements at step 135. If the merchant wishes to publish more advertisements, the process returns to step 131 for continued processing. If the merchant has chosen not to publish more advertisements at step 135, the commerce server exits the publication routine at step 139.

[0078] Illustrated in FIG. 7 is the flow diagram of the report generation process for the consumer server application of the present invention. The commerce server 23 first allows the merchant to select a type of report for generation at step 141. The commerce server 23 then requests the merchant to select a specific type of report requested at step 142. The commerce server 23 next generates a specific report requested and presents the report as a HTML document to the merchant website 26 merchant browser at step 143. In an alternative embodiment, these documents can be generated in other types of desired formats.

[0079] The reports can include but are not limited to the following information: Total number of impressions; Average number of impressions per client; Average time spent viewing an advertisement (i.e. impression duration); Graph of number of times advertisement seen vs. time of day; Average percentage of advertisement seen (e.g. on average, clients saw 92% of the ad); Total number of click-throughs (user clicks on advertisement URLs); Number of customers where the merchant is a favorite; Share of favorites slot—number of customers listing merchant as a favorite vs. total customers that have favorites (including breaking this down by category as well, e.g. of customers who list shoe stores in their favorites, a specific merchant is listed 71.3% of the time); advertisement share—Of all advertisements a customer has viewed, how many have been from this merchant; Time share—Of all advertisements, favorites, banners, etc., how much time have customers spent on average “viewing” the merchant; What share of advertisement clicks does the merchant get (number clicks to the merchant vs. clicks to other merchants); Distribution of the host domains used to access the merchant via the consumer registry (e.g. 75% from the .com domain, 10% from the .edu domain, etc.); Average connection speed of consumers connecting to the merchant registry and which visit the merchant; Breakdown of customer's screen resolution & screen depth; Distribution of client default browser settings.

[0080] The commerce server 23 then checks if the merchant has requested more specific reports at step 144 and if more reports are requested returns to step 141 for further processing. If no more specific reports are requested at step 144, then the report publication subroutine is exited at step 149 and returns to step 121 in FIG. 5.

[0081] Illustrated in FIG. 8 is flow diagram of the edit profile process for the commerce server 23 application of the present invention, referenced in FIG. 5 at step 118. The commerce server 23 waits for the merchant to input edit profile information at step 151. The commerce server 23 checks to see if the merchant requests a change of the login ID or password at step 152. If a change to the login ID or

password is selected at step 152, the commerce server 23 then changes the login ID or password at step 153 and proceeds to step 161. If a change to login ID or password is not selected at step 152, the commerce server 23 checks if a change to contract information is selected at step 154.

[0082] If a change to the contract information is selected, the commerce server 23 performs the requested contract information change at step 155 and proceeds to step 161. If a change to the contract information is not selected at step 154, the commerce server 23 then determines if the merchant requires a change to the category's keywords or an advertisement at step 156. If a change to the category's keywords or advertisement is selected at step 156, commerce server 23 then returns to perform the change to the advertisement requested at step 157. The change to the category's keyword or advertisement information is performed at FIG. 4, steps 103-109.

[0083] After completing a change to the category's keywords or advertisement information at step 157, the commerce server 23 then proceeds to step 161. If a change to the category's keywords or advertisement information is not selected at step 156 by the merchant, the commerce server 23 then checks if the merchant has indicated exit from the profile editing function at step 161. If exit of the profile edit routine is not requested at step 161, the commerce server 23 then returns to step 151 for further profile editing. If exit is selected at step 161, the commerce server 23 then exits via edit manager at step 169 and returns to step 121 in FIG. 5 for continued processing.

[0084] Illustrated in FIG. 9 is a flow diagram of the coupon creation process for the commerce server 23 application of the present invention referenced in FIG. 5 at step 122. The coupon creation process 170 is initialized at step 171 and waits for the merchant to input coupon information. The commerce server 23 accepts the input of merchant or manufacturer identification, the coupon value, expiration date, product ID associated with the coupon at step 172. The coupon creation subroutine 170 also accepts input of vendor ID, text description of the product associated with the coupon, a bit map image of the product, the categories for the coupon, and keywords to assist in searching of the coupon, at step 172. The commerce server 23 then creates a unique coupon ID at step 173, to uniquely identify the coupon information input by the merchant at step 172. The commerce server 23 saves the merchant or manufacturer information accepted at step 172 and the unique coupon ID created at step 173, into the coupon registry database at step 174. The commerce server 23 next reports (1) the coupon link to the registry using a URL to reference the coupon, and (2) the link to the coupon on a web page using a URL to the general public at step 175. At step 176, the commerce server 123 checks to see if the merchant has requested more coupons to be published. If more coupons are to be published, then the commerce server 23 returns to repeat steps 172 through 176. If there are no more coupons to be published at step 176, the commerce server 23 exits the publish coupon subroutine at step 179.

[0085] Illustrated in FIG. 11 is the flow diagram of the consumer shopper program 70 for the consumer user browser 65 of the present invention. The consumer shopper program 70 is initialized by the user at step 171. The consumer or merchant shopper program 70 checks if the

consumer requests a commerce server 23 interact connection at step 172. If the consumer has not requested interaction with commerce server 23 at step 172, the consumer shopper program 70 then proceeds to step 179 to continue processing with the main user interface in FIG. 13.

[0086] If the consumer does request interaction with the commerce server 23 at step 172, the consumer shopper program 70 then connects to the commerce server 23 at step 173. Once the connection is established with the commerce server 23, the consumer shopper program 70 then sends the demographic ID number for the consumer, the time stamp for the last time the consumer data was downloaded, and the version number of the program used by the consumer. The consumer shopper program 70 also sends for each merchant ID advertisement and each category advertisement, the statistical information for each advertisement the consumer has viewed. The statistical information captured about each advertisement viewed by the consumer includes, but is not limited to: the number of times each advertisement for each merchant in each category is seen; the percentage of the advertisement viewed; the total amount of time spent viewing the advertisement; what time periods of the day the advertisement is viewed; and the number of times the user has clicked on the advertisement to obtain further information from the merchant website 26. The consumer program will continue to send this type of information for each merchant ID and category ID, for each advertisement with captured statistical information.

[0087] Once the consumer shopper program 70 has sent all the statistical information captured from the consumer interaction, the consumer shopper program 70 requests and receives from the commerce server 23 all advertisements from each merchant and in each category that the user has preselected at step 175. This process on the commerce server 23 is herein defined in detail with regard to FIG. 9.

[0088] The consumer shopper program 70 also receives from the commerce server 23, any changes or updates to the list of merchants or categories. Also at step 175, the consumer shopper program 70 detects from the commerce server 23 if a newer consumer program version exists. If a new consumer shopper program 70 version exists, then the commerce server 23 transmits the location of the newest consumer shopper program 70 version at step 175.

[0089] Once the consumer shopper program 70 has received all the new advertisements regarding each merchant and each category selected at step 175, the consumer shopper program 70 then resets all the statistical information captured with regard to all elected advertisements at step 176. The consumer shopper program 70 then updates the advertisements on the main user interface at step 177. The update of the main user interface is herein defined in further detail with regard to FIG. 13.

[0090] After the consumer shopper program 70 has interacted with the commerce server 23 and sent all statistical information and received all new advertisements, the consumer shopper program 70 then goes to the main user interface for continued processing at step 179. The main user interface is herein defined in further detail with regard to FIG. 13.

[0091] Illustrated in FIG. 11 is the flow diagram of the statistical information capture process performed by the

commerce server 23 of the present invention. Once the consumer shopper program 70 has established a connection with the commerce server 23 at step 173 in FIG. 9, the commerce server 23 receives the statistical information for each advertisement viewed by the consumer with regard to each merchant ID and category ID previously selected. As defined previously, the statistical information acquired by the consumer shopper program 70 includes, but is not limited to, the number of times each advertisement is viewed, the percentage of the advertisement viewed by the consumer, the total time spent viewing each advertisement, at what time of day each advertisement is viewed and the number of times the consumer has requested further information with regard to an advertisement by clicking on the advertisement.

[0092] The commerce server 23, upon connection with the consumer shopper program 70 at step 173 in FIG. 9, acquires a daily snapshot of the advertisement database 24 and places the advertisement database 24 in memory at step 181. The commerce server 23 then waits for a consumer shopper program 70 to establish a connection at step 182. This connection is defined for the consumer shopper program 70 at step 173.

[0093] The commerce server 23, upon establishing a connection with the consumer shopper program 70 receives all advertisement statistics at step 183. These statistics were previously defined with regard to step 174 in FIG. 9.

[0094] At step 184, the commerce server 23 checks all of the advertisements viewed by the consumer for each merchant ID preselected by the consumer. For each merchant ID preselected, the commerce server 23 determines if the current merchant ID advertisement time stamp is newer than the last merchant ID advertisement accessed by the consumer. If so, the commerce server 23 transmits, to the consumer, all new merchant advertisements that are newer than the one last accessed by the consumer. The commerce server 23 then checks if there are more merchant ID entries to be processed at step 185 and returns to step 184 if there are more entries to be processed.

[0095] If there are no more category ID entry advertisements, the commerce server 23 then checks all of the advertisements viewed by the consumer for each category ID preselected by the consumer at step 186. For each category ID preselected, the commerce server 23 determines if the current category ID advertisement time stamp is newer than the last category ID advertisement accessed by the consumer. If so, the commerce server 23 transmits, to the consumer, all new category advertisements that are newer than the one last accessed by the consumer. The commerce server 23 then checks if there are more category ID entries to be processed at step 187 and returns to step 186 if there are more entries to be processed.

[0096] If there are no more category ID advertisements at step 187, the commerce server 23 then updates the advertisement database in memory at step 189 and then loops to step 182 to wait for the next consumer to connect to the commerce server 23.

[0097] Illustrated with regard to FIG. 11 is the flow diagram of the advertisement download process 190 for the consumer shopper program 70 of the present invention, previously referenced herein at step 177 in FIG. 9. The

update advertisement process residing in the consumer shopper program 70 acquires the URL from the advertisement ID at step 191. The consumer shopper program 70 pulls the URL, using a background thread or process, into the browser 65 at step 192. The consumer shopper program 70 saves the URL into memory at step 193. In applications where the consumer browser 65 is Internet Explorer, there is a temporary Internet file folder defined for these type of documents. However, it is well known in the art that there are numerous ways to provide memory storage accessed by a browser program.

[0098] The consumer shopper program 70 next places the advertisement entry into the main user interface utilizing the advertisement ID at step 194. The consumer shopper program 70 next checks if there are more advertisements to be received for all preselected merchant IDs and category IDs at step 195. If not all elected advertisement IDs have been received at step 195, the consumer program returns to step 191 to receive the next URL from the commerce server 23. If all advertisement IDs have been received for all the elected merchant IDs and category IDs selected by the consumer at step 195, then the update advertisement routine is terminated at step 199.

[0099] Illustrated in FIG. 12 is the flow diagram for the operation of the main user interface 210 referenced with regard to step 179 in FIG. 9. The consumer shopper program 70 starts the main user interface operation at step 201. The main user interface displays either all the consumer preselected specials (i.e., list of advertisement) for either merchant stores or category advertisements, list of merchant store advertisements or list of ideas (i.e., a favorites list) on the main user interface menu at step 202.

[0100] The list of ideas is an easy, flexible way for the consumer to maintain shopping lists, wish lists, etc. The list of ideas is a tabbed dialogue of lists the consumer wishes to maintain. Initially, only a new list "tab" will exist. When this is selected, either by clicking or adding an item, a rename dialogue will pop up asking the consumer for the desired name of this list. A new tab with this name will be created and the new list tab will shift to the right. With the exception of a new list tab "tab," the tabs will be sorted in alphabetical order. If more tabs are created than can fit on the screen, arrows will appear on the left with a "<" or on the right with a ">" as needed to allow shifting to tabs not visible. The tabs will always be within one row, i.e., they should not be stacked. The list of ideas helps the consumer to become comfortable with the idea of retaining items in preparation for future action. The list of ideas also provides for the use of a list as a local "gift registry" with the ability to e-mail the list to others.

[0101] A list will contain the following items:

[0102] 1. A check box to indicate whether or not an item has been purchased. This box serves as a way to keep a log within the user/browser area.

[0103] 2. Notes, including the consumer's own brief note regarding this item. This field is intended to allow flexibility for recording items as seen in the physical store.

[0104] 3. Location, wherein the preferred embodiment utilizes a URL where the item was found. It may also be possible to include other nonURL loca-

tion information here, in case of an item being available at a local physical store.

[0105] 4. The cost of the item will also be included in the list.

[0106] 5. Notes for any additional information that the consumer wants to retain is also included. It is possible to drag and drop web pages into this second notes attachment field. The notes attachment should also support clip board cut and paste.

[0107] The list of ideas is an icon on a browser bar that brings a consumer to the ideas area with no filtering. The first time to the ideas area, the left list tab will be active, i.e., positioned in front. On subsequent visits to this list of ideas, the last used list will be displayed and active.

[0108] Moving through the list to a merchant site can be done in the following ways. First, it can be accomplished by clicking on a tab that brings a list forward. As mentioned earlier, if a tab is a new list, then the process of creating a new list will automatically be initiated. Another way to move through the list of ideas is by clicking on a list item that selects another item. A third way to move through the list is by clicking on the location field which jumps to a merchant page. In the preferred embodiment, a URL is used to jump to a merchant page, thereby replacing the current area with the merchant page. Another method of navigating through the list of ideas is by selecting (clicking on) the notes icon that is made available (pops up) with the notes dialog. If a note does not exist, then it is created when clicked upon. The list of ideas also includes the ability to select a find button to bring a find dialog up for consumer interaction. The lists can then be searched by store name, catalog description, keywords, and/or text description. If there are multiple matches on a given search, the first item found is highlighted (with the list moved forward, if necessary). Utilizing the find button again can then be selected via a right click on a mouse button to jump to the next matched item. If no items match a consumer search, then a dialog box is displayed indicating this situation.

[0109] The user also has the ability to print a list of ideas. This feature allows for a list to be sent to a printer or saved to a text or other possible formats file. The list could then be sent via e-mail or other means to another person as a gift wish list. This allows the list to act as a local gift registry as noted previously on numerous different functions that can be utilized for a wish list of ideas. The wish list may allow searching as previously defined, adding an item to a list, or adding a last item to the list to display the last item added. The list of ideas may be deleted in its entirety or just a specific item within a list may be deleted. An entire list may be renamed or an item may be renamed. The cut and paste feature is also supported for an entire list or an individual item. The utilization of these lists will be shown herein with regard to FIGS. 13 and 16.

[0110] The main user interface next checks if the consumer has selected a specific merchant advertisement for display at step 203. If the consumer has not selected a specific merchant for display at step 203, then the main user interface checks if the user has selected a specific advertisement at step 204. If the consumer has selected either a specific merchant advertisement or specific advertisement to be displayed in steps 203 or 204, the main user interface

captures the statistical information with regard to each merchant advertisement or category advertisement viewed by the consumer at step 205. After the consumer browser has captured the statistical information for the specific advertisement selected in steps 203 and 204, the browser next inquires if there are more advertisement displays to be selected at step 206. When the consumer indicates that more advertisements are to be displayed, the process then returns to step 202 to allow the consumer to select the next desired merchant or specific advertisement. If the consumer has indicated that no more advertisements are being selected, or if no advertisements were selected in steps 203 and 204, the consumer browser then proceeds to step 209 to run the standard browser interface.

[0111] Illustrated in FIG. 13 is a flow diagram of the main user interface 210 for the consumer shopper program 70 of the present invention, referenced in FIG. 10 at step 189. The client browser 65 starts the main user interface 210 of the consumer shopper program 70 at step 211. The main user interface 210 provides the browse capability to the consumer. The browse capability enables the consumer to browse advertisements as illustrated in FIG. 19, the stores as illustrated in FIG. 20, shopping lists (i.e. catalogs) as illustrated in FIG. 21, lists of ideas as illustrated in FIG. 22, and lists of available coupons on the main user interface 210 with the client browser 65 at step 212. After a user makes a selection at step 212, the main user interface 210 checks to see if the user has requested to view an advertisement at step 213. If the user has requested to review an ad, the main user interface 210 proceeds to step 214 to perform the user view advertisement procedure 230 hereinafter defined in further detail with regard to FIG. 14 at step 214.

[0112] If the user did not select to view an advertisement at step 213, the main user interface 210 checks if the user has selected interaction with the wallet procedure 250 at step 215. If the user has requested a procedure 250 at step 215, the main user interface 210 performs the wallet procedure 250 at step 216, hereinafter defined in further detail with regard to FIG. 15.

[0113] When the user has not selected the wallet procedure 250 at step 215, the main user interface 210 checks if the user has selected interaction with the purchase list procedure 270 at step 217. If the user has selected interaction with the purchase lists, the main user interface 210 performs the purchase list procedure 270 at step 218 hereinafter defined in further detail with regard to FIG. 16.

[0114] If the consumer has not selected interaction with the purchase list procedure 270 at step 217, the main user interface 210 checks if the shopping cart procedure 290 has been selected at 221. If the shopping cart procedure 290 has been selected at step 221, the main user interface 210 performs the user shopping cart procedure 290 at step 222, hereinafter defined in further detail with regard to FIG. 17.

[0115] If the user has not selected the shopping cart procedure 290 at step 221, the main user interface 210 checks if the user has selected a buy procedure 310 at step 223. If the user has selected a buy procedure 310 at step 223, the main user interface performs the user buy procedure 310 at step 224, hereinafter defined in further detail with regard to FIG. 18.

[0116] If the user has not selected the buy procedure 310 at step 223, the main user interface checks if the user has

selected the exit function at step 228. When the user has not selected the exit function at step 228, then the main user interface returns to step 212 to continue the browsing function within the consumer shopper program 70. If the user has requested to exit the consumer shopper program 70 at step 228, the main user interface 210 exits the consumer shopper program 70 and runs the standard browser interface at step 229.

[0117] Illustrated in FIG. 14 is a flow diagram of the view advertisements process 230 in the consumer shopper program 70 of the present invention referenced in FIG. 13 at step 224. The consumer shopper program 70 starts the user view advertisement process 230 at step 231. An illustration of an example of an user view advertisement screen display for the merchant advertisements is shown in FIG. 19. The view advertisement process checks if the user has selected a store or specific advertisement for viewing at step 232. If the user has indicated the desire to view advertisements from a store or a specific advertisement at step 232, the user view advertisements process 230 displays the store specific advertisement selected at step 233. An illustration of an example of a specific store advertisement screen display is shown in FIG. 19. The example illustrates a store advertisement display 340 for "Summer Book Blast" for the store "barne-sandnoble.com".

[0118] During the display of the store or specific advertisement, the user view advertisement process 230 captures information for each advertisement selected by the user. The consumer shopper program 70 captures for each merchant ID advertisement and each category ID advertisement, the time that the advertisement was viewed by the consumer user in addition to other statistical information captured each time the advertisement is viewed by the consumer. The statistical information captured for each advertisement viewed by the consumer includes, but is not limited to, the number of times each advertisement for each merchant in a category is seen, the number of times each advertisement for each merchant in each category is seen, the percentage of advertisements viewed, the total amount of time spent viewing the advertisements, what time period of the day the advertisement is viewed, and the number of times the user has clicked on an advertisement to obtain further information from the merchant website 26. After the user has stopped the selection of advertisements to be viewed, the user view advertisement 230 process then checks if the user has selected the get coupon process at step 234.

[0119] If the user has selected the get coupon process at step 234, the user view advertisements process 230 captures for each coupon selected the user ID, the coupon ID, the coupon get date and time stamp, and the coupon redeem date and time stamp, at step 235. The user view advertisements process 230 then stores the coupon data on the user system 12 for further process during the purchase and redemption process hereinafter defined with further detail in FIGS. 17 and 18. The user view advertisements process 230 then acquires the next user selection at step 247 and repeats the user view add process starting at step 232.

[0120] If the user did not select the get coupon process at step 234, the user view advertisements process 230 then checks if the user has selected to add an item to the purchase list at step 236. If the user has selected to add an item to a purchase list at step 236, the user view advertisements

process 230 then adds the item to the purchase list at step 237 which is hereinafter defined in further detail with regard to FIG. 16. After the item has been added to a purchase list, the user view advertisements process 230 then acquires the next user selection at step 274 and repeats the loop processing at step 232.

[0121] If the user has not selected to add an item to a purchase list at 236, the user view advertisements process 230 then checks if the user has selected to add an item to a shopping cart at step 241. If the user has selected to add an item to a shopping cart at step 241, the user view advertisements process 230 then adds the item to the shopping cart at step 242, which is hereinafter defined in further detail with regard to FIG. 17. The user view advertisements process 230 then acquires the next user selection at step 247 and continues loop processing at step 232.

[0122] If the user has not selected to add an item to a shopping cart at step 241, the user view advertisements process 230 then checks if the user has selected to display more advertisements at step 234. If the user has selected to display more advertisements at step 234, the user view advertisements process 230 then browses the store's coupons and adds on the main user interface at step 244 and allows the user to make his next selection at step 247 and continue processing at step 232. If the user has not requested to display more advertisements at step 243, the user view advertisements process 230 then exits the user view advertisements process 230 at step 249 and returns to the main user interface 210 at step 214.

[0123] Illustrated in FIG. 15 is a flow diagram of the user wallet process 250 for the consumer shopper program 70 of the present invention. The client browser 65 starts the user wallet process 250 at step 251. The consumer shopper program 70 checks if the user has selected to add a new user at step 252.

[0124] If a new user addition was selected at step 252, the consumer shopper program 70 then requests user information, including the user name, location, limit, and payment method including card number, expiration date, name on card, etc., at step 253. The user wallet process 250 then validates the user information at step 255. The user information validated at step 255 is then written to the administrative payment server at step 256 and the user wallet process 250 returns to continue the loop process at step 252. The administrative payment server is normally implemented on the user system 12. However, the administrative payment server can be implemented on a separate computer in a network, such as for example but not limited to: the user system 13, 14 or 15; network server 21; or the commerce server 23.

[0125] If the user did not elect to add a new user at step 252, the user wallet process 250 then checks if the user has requested to edit user information at step 254. If the user has elected to edit user information at step 254, the user wallet process 250 requests that a user ID number be input at step 257. The user wallet process 250 then displays the user information for the user ID at step 258. After the user wallet process 250 has displayed the user information at step 258, the user wallet process 250 checks if the user has selected to delete a user at step 261. If the user has selected to delete a user at step 261, the user wallet process 250 proceeds to step 262 to delete the user information from the administrative

server database and then returns to step 252 to continue processing. If the user has not elected to delete a user at step 261, the user wallet process 250 allows the user to update the user information at step 263. The user wallet process 250 then validates the user information at step 264 and writes the validated user information to the administrative payment server at step 265. The user wallet process 250 then returns to step 252 for further processing.

[0126] If the user has not elected to edit user information at step 254, the user wallet process 250 proceeds to step 266 to see if the user wallet process 250 is done. If the user has selected done, the user wallet process 250 exits the user wallet process at 269. If the user has not selected done at 266, then the user returns to step 252 to continue processing.

[0127] Illustrated in FIG. 16 is a flow diagram of the consumer purchase list process 270 for the consumer shopper program 70 of the present invention. The user purchase list process 270 first checks if the user has elected to mail a purchase list at step 272. If the mail purchase list was selected at step 272, the user purchase list process 270 requests the title for the purchase list elected for mailing at step 273. The user purchase list process 270 encapsulates the selected list via the mime processing and mails the encapsulated list/FTP or otherwise transmits the selected purchase list to another user including the date and time that the list was mailed at step 273. The user purchase list process 270 then returns to continue processing at step 272. If mailing a purchase list was not selected at step 272, the user purchase list process 270 checks if a purchase list was received at step 274.

[0128] If a purchase list was received at step 274, the user purchase list process 270 verifies that the title of the purchase list received exists at step 277. If the title purchase list exists, the user purchase list process 270 matches the list mailed to the recipients and updates the purchase list if the purchase list currently contained by the consumer shopper program 70 is older. The user purchase list process 270 then returns to step 272 for further processing. If a purchase list was not received at step 274, the user purchase list process 270 then checks if the user has selected to publish a purchase list at step 281.

[0129] If the user has elected to publish a purchase list at step 281, the user purchase list process 270 requests a title for the purchase list selected at step 282. The user purchase list process 270 then converts the named purchase list to HTML and transmits the title HTML list to a web server including the date and time that the HTML purchase list was sent. The user purchase list process 270 then mails/transmits a URL to the indicated users. The user purchase list process 270 then returns to step 272 for continued processing. If the user has not elected to publish a purchase list at step 281, then the user purchase list process 270 then checks if a products item was selected at step 283.

[0130] If a product item was selected at step 283, then the user purchase list process 270 captures the product item information for each selection in a purchase list. The information captured includes the purchase list name, the merchant ID and the time stamp category ID and time stamp, the product item ID, the product item description, and the like, at step 284. If the user did not elect to add a product item to a purchase list at step 283, the user purchase list process 270 then checks if the user has elected to display more product items at step 285.

[0131] If the user has elected to select more product items at step 285, the user purchase list process 270 provides the ability for the user to browse stores, coupons, and advertisements on the main user interface at step 286. The user purchase list process 270 then returns to step 272 for continued processing. If the user has not elected to display more products items at step 285, the user purchase list process 270 is exited at step 289 and process returns to step 218 in FIG. 13.

[0132] Illustrated in FIG. 17 is a flow diagram of the user shopping cart process 290 of the consumer shopper program 70. The user shopping cart process 290 is started by the client browser 65 at step 291. The user shopping cart process 290 allows the user to browse stores, coupons, and advertisements on the main user interface at step 292. Once an item is selected during step 292, the user shopping cart process 290 checks if the user has selected to buy an item at step 293.

[0133] If the user has elected to buy an item, the user shopping cart process 290 extracts the item ID, item description, price, SKU, quantity of items to be purchased, the merchant ID supplying the item, advertisements and other information of the like, and adds the item information to the shopping cart list at step 294. The user shopping cart process 290 then returns to step 292 for further browsing. If the user has not elected to buy an item at step 293, the user shopping cart process 290 then checks if the user has elected to get a coupon at step 295.

[0134] If a user has elected to get a coupon, the user shopping cart process 290 has a coupon selected to the user coupon file at step 296. The coupon information includes the coupon ID, the get date of the coupon, and the redemption or expiration date of the coupon. The user shopping cart 290 then returns to step 292 for further processing. If the user has not elected to get a coupon at step 295, the user shopping cart process 290 then checks if the user has elected to clear an item from a shopping cart list at step 301.

[0135] If the user has elected to delete an item from the shopping cart at step 301, the item indicated is deleted at step 302 and the process returns to step 292 for continued processing. When the user has not elected to delete an item from a shopping cart at step 301, the user shopping cart process 290 then checks if the user has elected to print a shopping cart list at step 303.

[0136] If the user has elected to print a shopping cart list, the user shopping cart process 290 prints the indicated shopping list at step 304 and returns to step 292 for further processing. If the user has not elected to print a shopping cart list at step 303, the user shopping cart process 290 then checks if the user has elected to buy an item at step 305.

[0137] When the user has elected to buy an item, the user shopping cart 290 proceeds to step 306 to buy the indicated item. The process to buy an item is hereinafter defined in further detail with regard to FIG. 17. Once the item is purchased, the process then returns to step 292 for continued processing. If the user has not elected to buy an item at step 305, the user shopping cart process 290 then checks if the user has selected to exit the shopping cart at step 307.

[0138] If the user has not elected to exit the shopping cart process 290 at step 307, the user shopping cart process 290 returns to step 292 for further processing. If the user has

elected to exit the user shopping cart 290 at step 307, the user exits the shopping cart process at step 309 and returns to step 222 in FIG. 13 for continued processing.

[0139] Illustrated in FIG. 18 is a flow diagram of the consumer purchase process 310 for the consumer shopper program 70 of the present invention. The consumer browser 65 initializes the user buy process 310 at step 311. The user buy process 310 connects to the customer payment server to verify payment information, limits and user passwords at step 312. The user buy process 310 checks if the password entered was okay at step 313. If the password was not okay, the user buy process 310 then exits the user buy process 310 at step 329. If the check of the user password at step 313 is satisfactory, the user buy process 310 checks if the payment amount input at step 312 exceeds the spending unit of the user at step 314. If the spending limit for the user is exceeded at step 314, the user buy process 310 proceeds to step 329 to exit the user buy process. If the user has not exceeded the spending limits at step 314, the user buy process 310 then checks if the user has elected to redeem a coupon with a purchase at step 315. If the user has elected to redeem a coupon with a purchase, the user buy process 310 then redeems the coupon associated with the item with a coupon on a user system at 316. In either case, the user buy process 310 transmits a buy request to the merchant including the item and coupon information at step 321.

[0140] The user buy process 310 then waits to receive a buy summary from the merchant at step 322. The summary received from the merchant includes a request for payment information. This payment information requested by the merchant is then provided to the wallet function at step 323. The wallet establishes a secure protocol with the merchant system and transmits the requested payment information at step 324. It is also contemplated by the applicants that other payment type processes could be utilized instead of the MS wallet function as hereinafter defined. The merchant 26 then notifies the coupon registry that a user with a particular user ID is redeeming a coupon with a particular coupon ID. The coupon registry then creates a log item that documents the redemption of a particular coupon for a particular item by a particular consumer.

[0141] The user buy process 310 then checks if more items are to be purchased at step 326. If more items are to be purchased, the user buy process 310 then allows the user to browse the merchant advertisements, product listings or shopping cart for the next item to be purchased at step 327 and returns to step 312 for further processing. If the user has elected not to buy more items at step 326, the user buy process 310 then exits at step 329.

[0142] Illustrated in FIG. 19 is an example of a screen display for advertisements list 340. The advertisements list 340 displays advertisement items currently available from stores that the shopper has subscribed to. Each item in the list contains a store name 341, advertisement description 342, advertisement issue date 343 of the advertisement, and advertisement expiration date 344. Also illustrated in the merchant advertisement display 340 is the area for the currently selected advertisement 345. It is contemplated by the inventors that numerous other versions of merchant advertisement display 340 may contain similar or other types of information.

[0143] The advertisements list 340 can be sorted by the store name 341, advertisement description 342, advertise-

ment issue date of the advertisement 343, and advertisement expiration date 344 fields. If there are more advertisements than can be seen in the available list 340, then a scroll bar is produced and displayed. The advertisements list 340 allows the shopper to scan through multiple advertisement descriptions at once, to quickly scan for advertisements of interest. The current advertisement item selection is shaded. Initially, only the advertisements list 340 is displayed, i.e., no advertisements content is displayed. This feature avoids downloads from the merchant site at undesired times and also allows the shopper to see a larger list before selecting an advertisement of interest.

[0144] The advertisements list 340 displays an actual advertisement from a merchant site. When an item in the advertisements list 340 is selected for display on terminal 46, the associated advertisement is retrieved and displayed. The advertisement is retrieved either locally, if it has already been downloaded, or from the merchant site using the URL. The size of the advertisements list content area will be the recommended size for an advertisement for optimal viewing and fast download, however, the advertisement can be larger than the content area. If an advertisement is larger than the advertisements list content area, scroll bars are generated and displayed.

[0145] The advertisement 345 overlays the advertisements list 340. If advertisement 345 content is not being displayed, the advertisement 345 fills the advertisements list 340 viewing area again. Once an advertisement 345 has been retrieved from the merchant site, it will be stored locally.

[0146] The intent of basic operation is to allow all the primary functions for viewing advertisements to be done with a single point and click. No menu pull-downs, mouse right-clicks, or drag and drops are required for these functions. The default behavior here is to only download advertisement content from a merchant server 26 on demand. Simply selecting (clicking on) the "Advertisements" icon brings the shopper to the advertisements area, with no filtering. The advertisement items are sorted by the current sort field. If the shopper is here for the first time, the first advertisement item in the list is highlighted. If the shopper was here previously in this session, it remembers where he/she left off. For example, if the shopper left "Nugget" and went to the "Barnes & Noble" site by clicking on one of the URL references in the advertisement, clicking on the "Advertisements" icon would bring him/her back to the same advertisement. Moving through advertisements and to the merchant site can be done in several ways. First, clicking on an underlined advertisement description (URL) highlights the advertisement item and displays the corresponding ad. The advertisement is downloaded from the merchant server 26, if it has not been already.

[0147] Clicking outside this underlined advertisement description, e.g. in the date region, simply highlights the advertisement item. No advertisement content is displayed. This is to allow for selection to use the delete icon or as a placeholder, without triggering a download.

[0148] Clicking or moving within the scroll bar, on the right, scrolls through the advertisement items only, using standard scrolling behavior. The advertisement content area does not change during the scrolling of the advertisement items. The current advertisement remains selected and displayed until another advertisement item is selected.

[0149] Clicking on the up-arrow and down-arrow icons in the toolbar region moves line by line through the advertisement list, selecting advertisement items. As each advertisement item is selected, it is highlighted and the corresponding advertisement is displayed. The advertisement is downloaded if it is not already stored locally. The appropriate arrow is dimmed (made unavailable) when on the first or last advertisement item in the list.

[0150] Clicking on the Store bitmap in the advertisement list jumps to the merchant server 26. The advertisements functional area goes away and is replaced with the merchant's home page. This is the same behavior as in the Stores functional area.

[0151] Clicking on the X, in the upper right corner of the advertisement content, removes the advertisement content and replaces the area with the full advertisement list. The advertisement is not deleted.

[0152] Clicking on a URL within the merchant's advertisement also jumps to the merchant site. The advertisements functional area goes away and is replaced with the page referenced by the URL.

[0153] Clicking on the Advertisements icon in the band area brings the shopper back to the advertisements functional area.

[0154] Because the list of all stores could become very large, there is a find store feature that can be accessed from various pop-up menus and from the toolbar. A name can be typed in directly, or a name previously searched for can be selected from the combo box in which a list of the last 10 searches is kept in the order in which they were attempted. This means that the most recent search is found at the top. The search is case-insensitive. Wildcard characters or any kind of regular expression syntax are supported. All store names and keywords that stores have registered are searched. If there are multiple matches in a given search, store names are displayed first in the results list followed by store names returned as a result of registering a keyword that matched. In this results dialog, store names are alphabetized in these two sets. If no store matches the user's search, then a dialog box is displayed to notify the user.

[0155] Illustrated in FIG. 20 is an example screen display of store information during the browsing process of step 212 of FIG. 13. The illustration of the example store display 350 includes, but is not limited to, the department information 351 listing all of the individual departments within that can be searched for a particular store. The departments (or equivalent term) area 351 displays the first level of main categories. Selection of a category drills down to its subcategories, i.e. subcategories 352 and 353 respectively, until the stores level is reached. Categories and stores are not mixed within a level. These subcategories 351, 352 and 353 are searchable categories within the stores listed in the featured store area 357. At the lowest level is the stores list area 357. To show position within the category and stores lists, the selected items (e.g., Food & Drink, Coffee Shops) are shaded. It is contemplated by the inventors that there could be other information that may be displayed for each featured store.

[0156] Navigating through Stores and to the merchant site is done in the following ways. First, by clicking on a

category icon pops up a subcategory list. Subcategory lists continue to pop up until the stores level is reached.

[0157] When the mouse 44 moves over category or store names, a description pops up, similar to the "Favorites" menu in Internet Explorer. Another way is by moving the mouse 44 over a category, without clicking, also causes the next category level to pop-up. Clicking on a store icon jumps to the merchant's home page, replacing the Stores display area. The store icon can be in the featuring area or in a stores list within a category.

[0158] Illustrated in FIG. 21 is a screen display of an example shopping list 360. The shopping list screen display 360 includes a buy indicator area 361. While the example shows that text or checkmark may be entered into the buy area to indicate that an item is to be purchased, it is also contemplated that there may be various other types of methodology such as having a push button indicator or dialog box or the like. Also included in an example of the shopping list 360 is the indicator that the items are a subset of another shopping list. This indicator 362 communicates that the overall item category listed comprises a further shopping list. Also illustrated in the example shopping list 360 is the quantity of items desired. This quantity 363 is indicated for each item. The shopping list 360 also includes a textual description of each item desired. The item description 364 can indicate the item description as well as if the item is further comprised of another shopping list. It is also contemplated by the inventors that an item ID and price can also be included in the shopping list 360.

[0159] Illustrated in FIG. 22 is an example screen display of a purchase list 370 as referenced in FIG. 13. The purchase list display screen 370 includes a means to differentiate the different purchase lists by utilizing the purchase list indicator 371. Also, in the example screen for purchase lists is an indicator 372 for indicating whether or not an item is to be purchased or deleted. The purchase list display also includes a note area 373 in which to note the item to be purchased. The example purchase list display 370 further includes the location of where the item is to be purchased 374 and the cost of the item 375.

[0160] The purchase list 370 area displays a tabbed dialog of lists that the shopper wishes to maintain. Initially, only a "New List" tab will exist. When this is selected, either by clicking or adding an item, a Rename dialog will pop-up asking for the desired name of this list. A new tab with this name will be created and the "New List" tab will shift right. With the exception of the "New List" tab, the tabs will be sorted in alphabetical order. If more tabs are created than can fit on the screen, arrows will appear to the left (<) or right (>) as needed to allow shifting to tabs not visible. The tabs will always be within one row, i.e., they will not be stacked.

[0161] A list will contain the following items. Checkbox 372 indicates whether item has been purchased. This serves as a way to keep a purchase log within this area. Checking this box may trigger a move of this item to the Purchase Log. Note 373 are the shoppers own brief note regarding this item. This field allows flexibility, e.g. for recording items seen at a physical store. Location 374 is a URL where the item was found. It may also be possible to type other non-URL Location info here, in the case of a physical store. The cost 375 area is the cost of the item. Additional notes attachment 376 are provided for any additional information

the shopper wants to retain. It is possible to drag and drop web pages to this. The notes attachment supports clipboard cut and paste.

[0162] A purchase log can be created for items that have already been purchased. This may be wrapped in with the purchase lists 370 area, e.g. a separate tab for purchases or a flag that indicates an items has been purchased, with a notes attachment for receipts, etc. The Purchase Log will retain information about which credit card was used, receipts, merchant details, contact data, etc.

[0163] Clicking on the "Ideas" icon in the Shopper bar brings the shopper to the purchase lists 370 area, with no filtering. The first time to this area, the leftmost list tab will be active (positioned in front). On subsequent visits to this area, the last list used will be active.

[0164] Moving through lists and to the merchant site is done in the following ways. First, by clicking on a tab brings its list forward. As mentioned earlier, if the tab is "New List", the process of creating a new list will automatically be initiated. Secondly, clicking on a list item selects that item. Data can then be entered or the item can be deleted, moved to the purchase log when available, etc. Clicking on a Location URL jumps to that merchant page, replacing the current area with the merchant page. Clicking on the notes icon pops up the notes dialog. If a note does not exist, it is created. Clicking the Find button (or selecting Find through a popup menu), brings up the Find dialog, similar to the Find dialogs found in the other function areas. The lists can be searched by store name and/or text description.

[0165] The search is case-insensitive. Wildcard characters and any kind of regular expression syntax are supported. If there are multiple matches in a given search, the first item found is highlighted (with its list moved forward if necessary). "Find Again" can then be selected via a right click popup to jump to the next matched item. If no items match the user's search, a dialog is displayed indicating this.

[0166] Clicking the Print button in the toolbar brings up a dialog for printing or exporting data. This allows for a list to be sent to a printer or saved to a text (or other possible formats) file. The text list can then be sent via email to another person as a gift wish list. This allows the list to act as a local "Gift Registry". The feature may be added to directly send the list via email.

[0167] Illustrated in FIG. 23 is an example display of the purchase 380 screen. The purchase screen 380 includes a notation area 381 to indicate whether or not the item is currently being purchased, is in transit, or a like notation. The date that each item was purchased is indicated in the purchase list date area 382. This purchase date 382 allows the consumer to verify the purchase date. The merchant that an item is being purchased from is indicated in the merchant area 383. While the merchant area 383 is depicted as a text description, it is also contemplated by the inventors that an alternative would be to display a merchant ID instead of, or in combination with, the text merchant identification. Also contained within the example purchase screen 380 is the amount of each item to be purchased. The amount area 384 indicates the total amount of the purchase from a particular merchant. As shown in the description area 385 is a description of the items that are being purchased. It is also contemplated by the inventors that instead of or in addition to

the text description that a product ID could also be utilized. The credit card area 386 indicates what payment method was utilized for a particular purchase transaction.

[0168] Illustrated in FIG. 24 is an example of the purchase property screen display 400. The purchase property display 400 includes the date 401 that an item was purchased and the total amount 402 of the purchase. Area 403 indicates the textual name of the merchant, however, it is contemplated by the inventors that a merchant ID may be utilized in conjunction with, or instead of, the text description of the merchant. Illustrated in description 404 is the description of the items being purchased. While the overall description may be displayed in the description area 404, it is also contemplated by the inventors that a product ID or other code may be used in combination or instead of the textual description. Illustrated in shipping status area 405 is the status of the transaction. It is also contemplated by the inventors that the text of the status description may be utilized in combination or instead of a status ID. The example purchase properties screen display 400 may also include an indicator for the user to request a status check of a particular purchase transaction. It is contemplated that this status display indicator 406 may be a dialog screen user input or the like. Illustrated in the example purchase properties screen 400 is the payment method area 407. The payment area 407 generally contains a textual description of the credit card, however, it may include other references to other types of payment.

[0169] Illustrated in FIG. 25 is the notes field of the example of the purchase property screen 400. The notes screen 410 includes a notes area 411 that indicates the type of notes to be documented. The inventors contemplate that there may be numerous different note types for a particular transaction. The notes includes a label 412 that indicates the textual description of the general topic of the textual notes listed in note area 413.

[0170] The consumer-to-merchant shopper system 70, which comprises an ordered listing of executable instructions for implementing logical functions, or its contained subroutines, can be embodied in any computer-readable medium for use by or in connection with an instruction execution system, apparatus, or device, such as a computer-based system, processor-containing system, or other system that can fetch the instructions from the instruction execution system, apparatus, or device and execute the instructions. In the context of this document, a "computer-readable medium" can be any means that can contain, store, communicate, propagate, or transport the program for use by or in connection with the instruction execution system, apparatus, or device.

[0171] The computer readable medium can be, but is not limited to, an electronic, magnetic, optical, electromagnetic, infrared, or semiconductor system, apparatus, device, or propagation medium. More specific examples (a nonexhaustive list) of the computer-readable medium would include the following: an electrical connection (electronic) having one or more wires, a portable computer diskette (magnetic), a random access memory (RAM) (magnetic), a read-only memory (ROM) (magnetic), an erasable programmable read-only memory (EPROM or Flash memory) (magnetic), an optical fiber (optical), and a portable compact disc read-only memory (CDROM) (optical).

[0172] Note that the computer-readable medium could even be paper or another suitable medium upon which the program is printed, as the program can be electronically captured, via, for instance, optical scanning of the paper or other medium, then compiled, interpreted or otherwise processed in a suitable manner if necessary, and then stored in a computer memory.

[0173] The foregoing description has been presented for purposes of illustration and description. It is not intended to be exhaustive or to limit the invention to the precise forms disclosed. Obvious modifications or variations are possible in light of the above teachings. The embodiment or embodiments discussed were chosen and described to provide the best illustration of the principles of the invention and its practical application to thereby enable one of ordinary skill in the art to utilize the invention in various embodiments and with various modifications as are suited to the particular use contemplated. All such modifications and variations are within the scope of the invention as determined by the appended claims when interpreted in accordance with the breadth to which they are fairly and legally entitled.

What is claimed is:

1. A method for publishing and distributing coupons on a network system, the method comprising the steps of:

receiving a request to create a coupon;
receiving coupon data for said coupon;
saving said coupon data to a database; and
providing access on said network to said coupon by a customer.

2. The method of claim 1, wherein the step of providing said access further includes the step of:

linking said coupon to a world wide web page.

3. The method of claim 2, wherein the step of linking said linking said coupon to a internet web page further includes the step of:

utilizing an uniform resource locator to link said coupon to a world wide web page.

4. The method of claim 1, wherein the step of providing said access further includes the step of:

providing for an ability of said customer to search said coupon database.

5. The method of claim 4, wherein the step of providing for an ability of said customer to search said coupon database further includes the step of:

enabling said customer to search said coupon database by a coupon characteristic, wherein said coupon characteristic is selected from a group consisting of a product name, a product identification number, a product category, a coupon expiration date, a vendor name, or a vendor identification number.

6. The method of claim 1, wherein the step of providing said access further includes the step of:

providing for an ability of said customer to store said coupon data on a customer device.

7. A method for redeeming coupons during an purchase using a merchant server on a network system, the method comprising the steps of:

receiving a request for purchasing an item from a consumer;

receiving a request for redeeming a coupon for said purchase of said item from said consumer;

verifying said coupon is a valid coupon;

allowing said coupon to be redeemed in said purchase of said item if said coupon is a valid coupon; and

updating a coupon database to record that said coupon has been redeemed by said customer.

8. A commerce system for publishing and distributing coupons on a network system, comprising:

means for receiving a request to create a coupon from a vendor;

means for receiving coupon data for said coupon from said vendor;

means for saving said coupon data to a database; and

means for providing access to said coupon by a customer on said network.

9. The system of claim 8, wherein said providing means further comprises:

means for linking said coupon to a world wide web page.

10. The system of claim 9, wherein said linking means further comprises:

means for utilizing an uniform resource locator to link said coupon to a world wide web page.

11. The system of claim 8, wherein said providing means further comprises:

means for providing for an ability of said customer to search said coupon database.

12. The system of claim 11, wherein said search providing means further comprises:

means for enabling said customer to search said coupon database by a coupon characteristic, wherein said coupon characteristic is selected from a group consisting of a product name, a product identification number, a product category, a coupon expiration date, a vendor name, or a vendor identification number.

13. The system of claim 8, wherein said providing means further comprises:

means for providing for an ability of said customer to store said coupon data on a customer device.

14. A merchant server on a network system for redeeming coupons during a purchase, said merchant server comprising:

means for receiving a request for purchasing an item from a consumer;

means for receiving a request for redeeming a coupon for said purchase of said item from said consumer;

means for verifying said coupon is a valid coupon;

means for allowing said coupon to be redeemed in said purchase of said item if said coupon is a valid coupon; and

means for updating a coupon database to record that said coupon has been redeemed by said customer.

15. A computer system for publishing and distributing coupons on a network system, comprising:

- a merchant server that transmits request to create a coupon and transmits coupon data regarding said coupon; and
- a commerce server that receives said request to create a coupon, receives said coupon data regarding said coupon, saves said coupon data to a coupon database, and provides access to a customer on said network to said coupon.

16. The commerce server of claim 15, further comprising:

- a first commerce mechanism for linking said coupon to a world wide web page.

17. The commerce server of claim 15, further comprising:

- a second commerce mechanism providing for an uniform resource locator to link said coupon to a world wide web page.

18. The commerce server of claim 15, further comprising:

- a third commerce mechanism providing for an ability of said customer to search said coupon database.

19. The commerce server of claim 15, further comprising:

- a fourth commerce mechanism enabling said customer to search said coupon database by a coupon characteristic, wherein said coupon characteristic is selected from a group consisting of a product name, a product identi-

fication number, a product category, a coupon expiration date, a vendor name, or a vendor identification number.

20. The commerce server of claim 15, further comprising:

- a fifth commerce mechanism providing for an ability of said customer to store said coupon data on a customer device.

21. A merchant server on a network system for redeeming coupons during a purchase, said merchant server comprising:

- a first merchant mechanism for receiving a request for purchasing an item from a consumer;
- a second merchant mechanism for receiving a request for redeeming a coupon for said purchase of said item from said consumer;
- a third merchant mechanism for verifying said coupon is a valid coupon;
- a fourth merchant mechanism for allowing said coupon to be redeemed in said purchase of said item if said coupon is a valid coupon; and
- a fifth merchant mechanism for updating a coupon database to record that said coupon has been redeemed by said customer.

* * * * *

EVIDENCE APPENDIX K
COPY OF SMALL U.S. PATENT NO. 4,815,741

- [54] **AUTOMATED MARKETING AND GAMING SYSTEMS**
- [76] **Inventor:** Maynard E. Small, 105 Ward Pkwy., Apt. 507, Kansas City, Mo. 64112
- [*] **Notice:** The portion of the term of this patent subsequent to Jun. 2, 2004 has been disclaimed.
- [21] **Appl. No.:** 34,282
- [22] **Filed:** Apr. 2, 1987

Related U.S. Application Data

- [63] Continuation-in-part of Ser. No. 668,011, Nov. 5, 1984, Pat. No. 4,669,730.
- [51] **Int. Cl.⁴** A63F 9/00
- [52] **U.S. Cl.** 273/138 A; 273/1 E
- [58] **Field of Search** 273/1 E, 85 G, 138 A, 273/DIG. 28; 364/410-412

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Primary Examiner—Maryann Lastova
Attorney, Agent, or Firm—Litman McMahon & Brown

[57] **ABSTRACT**

An apparatus and method for automated marketing and gaming wherein a player inserts an identification card into an automated remote interface device and accesses an account at a subject financial institution. The user identifier provides access to the financial account, and a user indicia is compared to a game indicia. In one form a sweepstakes processor compares the user and game indicia to determine whether a selected winning correlation is present between the game indicia and user indicia. The apparatus is adapted to be used with a network of data processing machines and a transmission facilities device, which provides data processing communication among the data processing machines. The processor can alternatively be in electronic communication with a government-associated lottery system to purchase lottery chances for distribution to users of the remote interface device. Further, the processor can be utilized to allow a user to purchase a lottery ticket electronically through a transfer of funds from the user's financial account to a lottery-type game account.

29 Claims, 4 Drawing Sheets

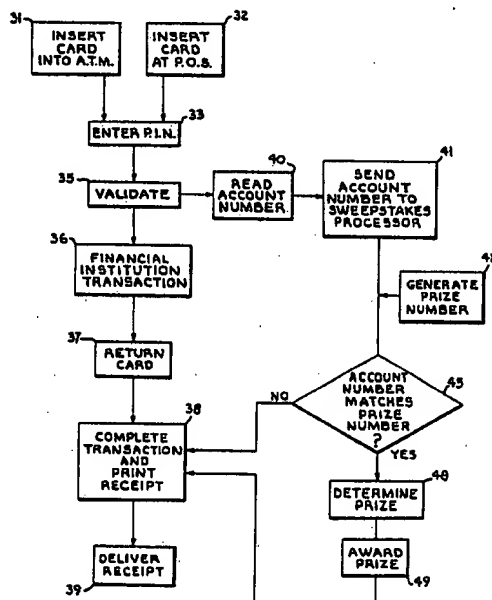
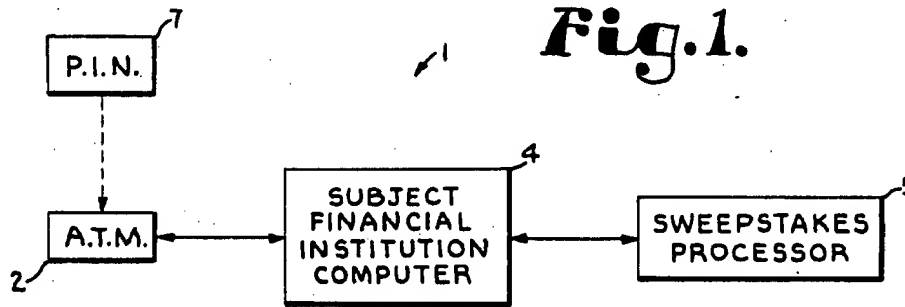
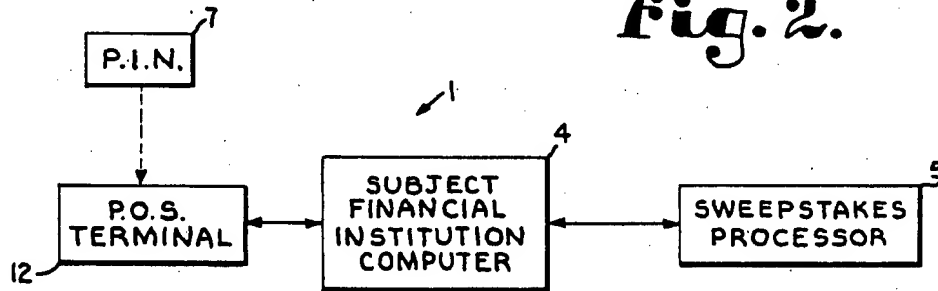
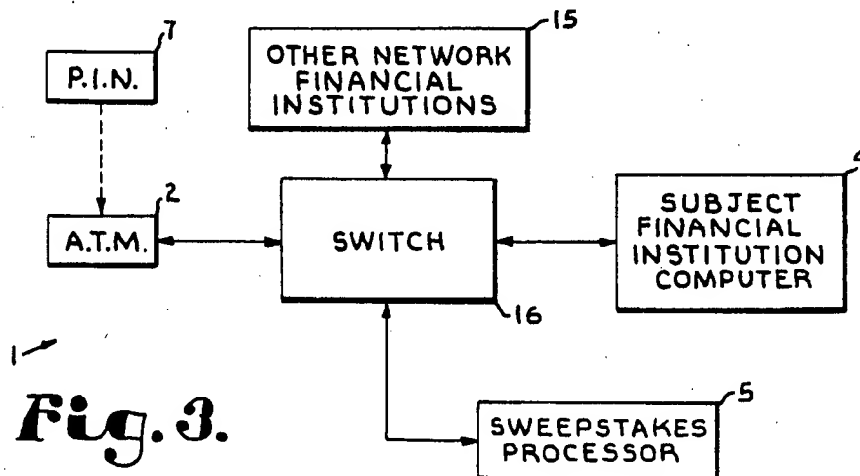
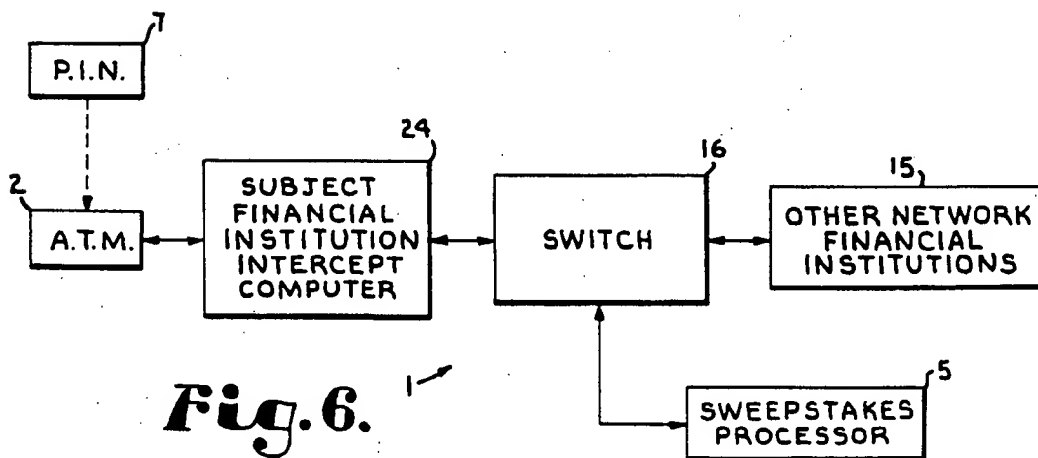
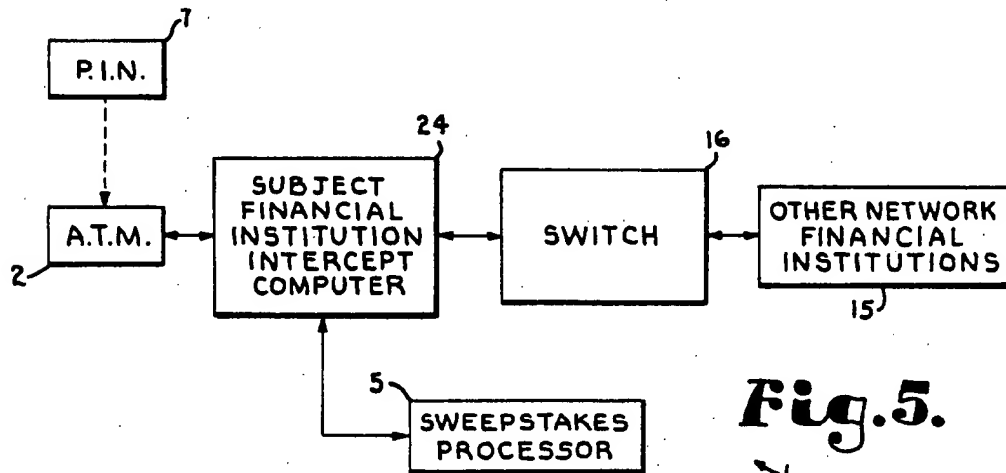
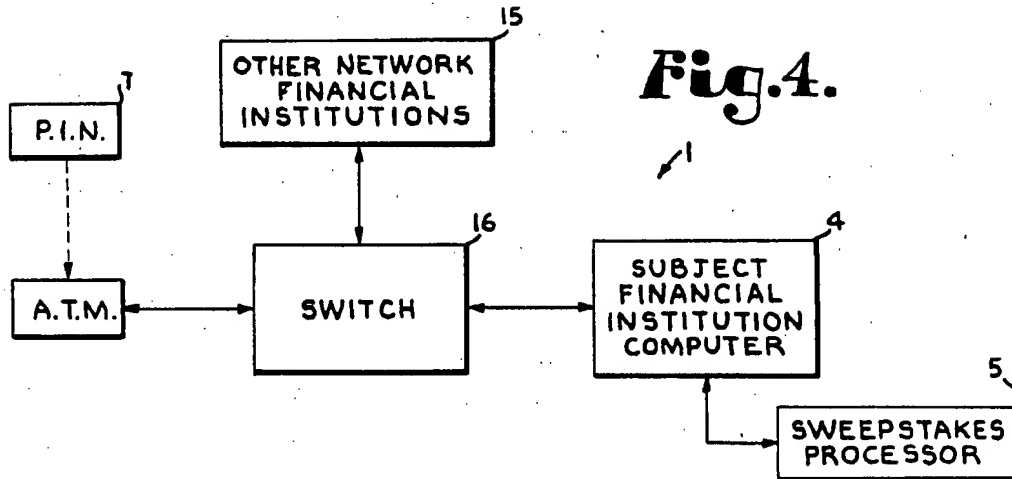


Fig. 1.**Fig. 2.****Fig. 3.**



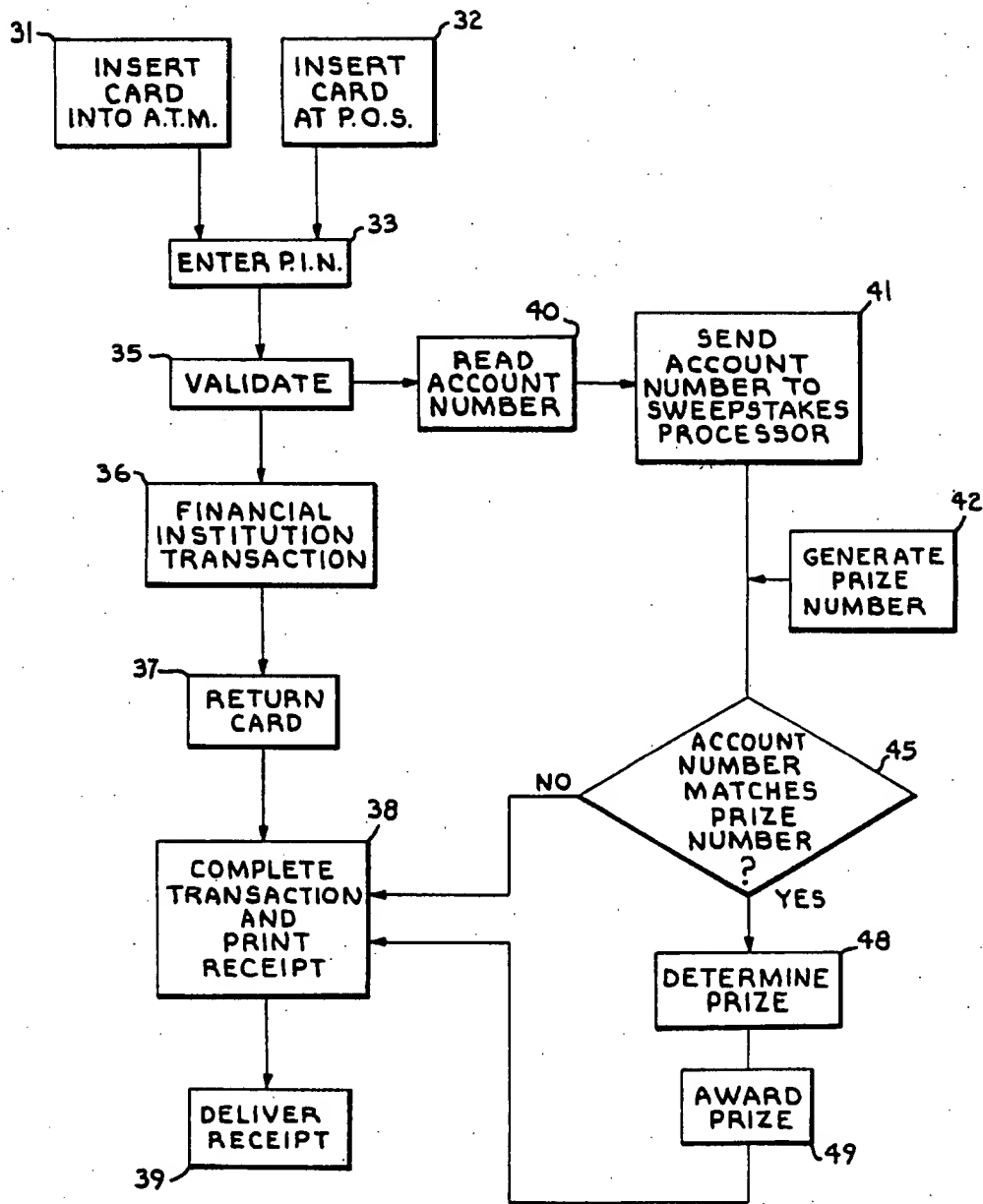
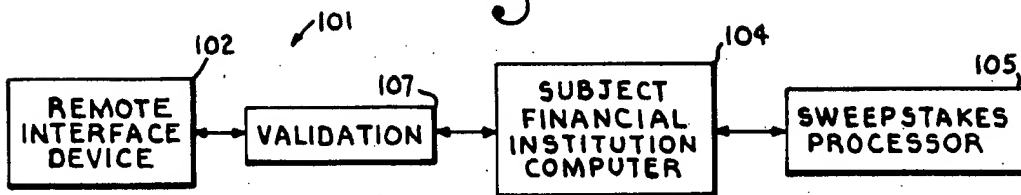
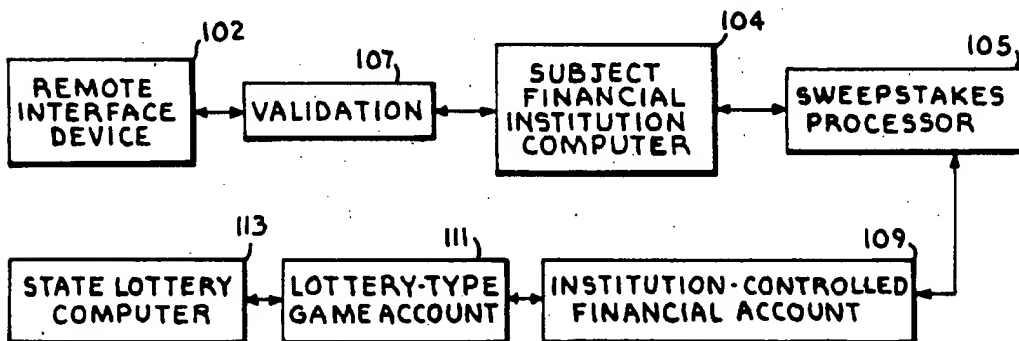
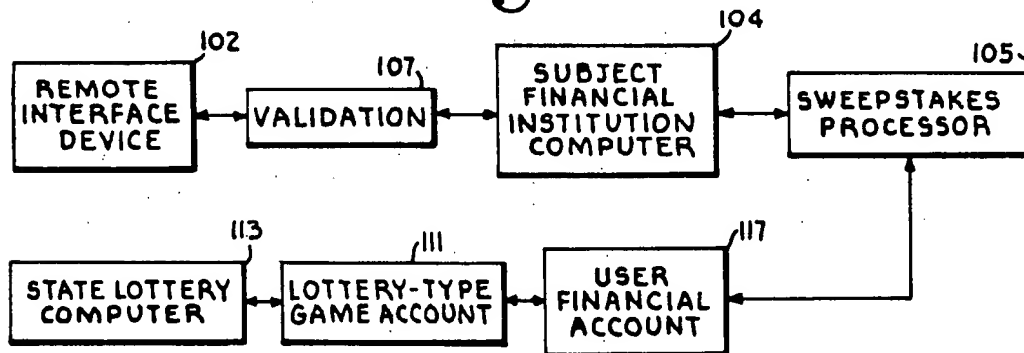
**Fig. 7.**

Fig. 8.**Fig. 9.****Fig. 10.**

AUTOMATED MARKETING AND GAMING SYSTEMS

CROSS-REFERENCE TO RELATED APPLICATION

The present application is a continuation-in-part of United States application Ser. No. 668,011, filed Nov. 5, 1984, entitled AUTOMATED SWEEPSTAKES-TYPE GAME, now U.S. Pat. No. 4,669,730.

BACKGROUND OF THE INVENTION

This invention relates to a marketing and gaming apparatus and, more particularly, to devices which, in one form, require the use of a remote computer terminal and data processor for matching certain user indicia with corresponding game indicia.

Sweepstakes-type games are well known, and typically involve the selection of a series of numbers by a player and the comparison of same to a random pre-selected number determined by the sweepstakes operator. If the numbers match, the player or user is typically awarded a prize, either as pre-determined by the operator or through an alternative random selection process. Previous sweepstakes-type games have required active participation by the user.

In recent decades, significant advancements have been made in the development of computer technology. Such elements have influenced the operation of financial institutions, such as banks and savings and loans associations. It is now commonplace for a financial institution to issue its customers a debit card with a magnetically encoded stripe on the back thereof. The debit card is designed for insertion into a remote computer terminal, such as an automated teller machine (ATM) or point-of-sale (POS) terminal. The remote terminal is in electronic communication with a data processor associated with the financial institution. Upon entry of proper user identifiers, such as a personal identification number (PIN), the user has electronic access to his or her account so that various transactions can be undertaken.

One significant development in the computer field enables a network of participating financial institutions to communicate among themselves such that the customer of one institution can use his or her debit card to execute certain transactions at another participating institution's automated teller machine. These networks are typically known as electronic funds transfer (EFT) systems. To accomplish the routing of a particular customer's transaction to his account with his financial institution, sophisticated data processing machines known as transmission facilities devices, or switches, are utilized. The switch is comparable to a traffic controller in that it routes a specific transaction to its appropriate destination. It is envisioned that with proper computer hardware and software, a user will be able to access his financial account from practically anywhere in the world.

The advantage to the financial institution is that the amount of paperwork is drastically reduced in that no checks or the like are involved. In the case of the POS terminal, the user's financial account is immediately debited in the amount of the user's purchase. Such a system is advantageous to the merchant because the funds are immediately transferred to the merchant's account from the user's account; thus, there is no float time or chance of non-collection of a check. Again, the

financial institution saves time and money through the reduction of its paper processing.

Notwithstanding the convenience to the user, the use of debit cards at ATMs and POS terminals has not been as high as the financial institutions require to achieve substantial economic benefit from the machines. Thus, there exists a need for a manner in which to promote the use of the machines, both for the benefit of a financial institution and the associated merchants. Preferably, the promotional scheme should promote the use of the debit cards in addition to promoting the goods and services of the merchants by rewarding the user of the ATM or POS terminal. There further exists a need for a device to promote the debit card use on a broad geographic basis without resorting to active involvement of the user or employees of the financial institution. In order to utilize the machines more fully, there is a need to expand their uses, as by using them to effect the purchase of lottery tickets.

OBJECTS OF THE INVENTION

The principal objects of the present invention are: to provide a game apparatus for encouraging the use of remote financial institution interface devices; to provide such a game apparatus which utilizes a sweepstakes-type game scheme; to provide such a game apparatus which utilizes a sweepstakes game computer in conjunction with a financial institution data processor and a remote interface device; to provide such a game apparatus which can be used in conjunction with a network of financial institution data processors having electronic communication means thereamong; to provide such a game apparatus having means to identify a user of a remote interface device and assign a user-specific indicia thereto for matching to a randomly selected game indicia to determine whether the user wins a prize; to provide such a game apparatus wherein the user indicia is the user's account number with his or her financial institution; to provide such a game apparatus which may be utilized to purchase separately lottery chances by a user; to provide such a game apparatus which uses complimentary lottery chances as an inducement to use the remote interface devices; to provide such a game apparatus which is relatively simple to use, economical to manufacture, requires relatively low labor input, minimal computer time, and user active participation and is particularly adapted for the proposed usage thereof.

Other objects and advantages of this invention will become apparent from the following description taken in conjunction with the accompanying drawings wherein are set forth, by way of illustration and example, certain embodiments of this invention.

SUMMARY OF THE INVENTION

Apparatus and method designed for participation of a user in a marketing or gaming system promotes the use of a remote computer terminal adapted to be in electronic communication with a financial institution. A user interacts with an interface device, such as a remote computer terminal, and more particularly an automated teller machine (ATM) or point-of-sale (POS) terminal. Preferably, a magnetically encoded debit card is inserted into the ATM or POS terminal and the user is required to identify his account through the use of a personal identification number (PIN).

Upon validation of the user's access to the financial institution account, the account number is relayed to a sweepstakes processor. The sweepstakes processor has means for generating a random game indicia, e.g. a game number. The processor is further adapted to compare the account number and the game number and determine whether the two numbers match.

The present invention is designed to be used in conjunction with a network of financial institutions having interconnected data processing facilities. Typically, each separate financial institution has a plurality of ATM, POS terminals or other remote interface devices. In recent years network systems have been developed to allow electronic communications among the various ATMs and POS terminals and the financial institutions such that a user of any of the ATMs can access his personal financial account. A transmission facilities device, commonly known as a switch, is a sophisticated computer facility having the means to route a particular transaction from any of the ATMs or POS terminals to the appropriate financial institution and then relay information back to the ATM or POS terminal. In this way, a user can access his financial account in one city even though the user is in a city located many hundreds or thousands of miles away, so long as the ATM or POS terminal and the individual user's financial institution are on the network.

In order to limit fraudulent access, in addition to the magnetically encoded debit card, each user is assigned a personal identification number, i.e. PIN, which is designed to be kept secret. Typically, only a central holding company has access to the PINs, although the PINs are recorded in each financial institution's computer data banks. Appropriate security limits are placed on access to these computer data banks.

A sophisticated communications network such as the one described is an expensive endeavor. In order to justify the expense, it is vital that the financial institution's customers utilize the system. The financial institutions benefit from the use of the system in that the transactions are essentially paperless and are not labor intensive, resulting in cost savings sufficient to justify the capital outlay. In addition, some financial institutions charge a nominal fee to the user for each transaction using the debit card, in much the same way that check fees are imposed.

It is the purpose of the present invention to stimulate use of the ATMs and POS terminals by providing a sweepstakes-type game which utilizes a network apparatus. Upon insertion of the debit card to an ATM or POS terminal, the user is required to enter the PIN, which validates the user's access to the particular financial institution account. The sweepstakes processor reads the account number or other selected user indicia and compares the account number to a computer-generated prize number. The prize number may be randomly generated instantaneously with the reading of the account number, or one or more winning account numbers can be pre-selected, but preferably on a random basis. In either case, the prize number is compared to the account number and a determination is made as to whether a winning correlation exists between the two numbers. Preferably, an identical match is required between the prize number and account number. Typically, the account numbers are about ten digits in length; thus, a great deal of flexibility is available in terms of the required winning correlation. It is possible that a particular prize could be awarded for matching,

for example, five numbers out of ten numbers, whereas a different selected prize could be given for an identical match.

If the account number does not match the prize number, this information is relayed back to the ATM or POS terminal (through the switch if present) and preferably, the user is so notified on a transaction receipt, which is delivered to the user upon completion of the other financial transactions.

If a winning correlation exists, the sweepstakes computer is programmed to determine the prize to be awarded the user. As with the generation of the prize number, it is possible to randomly select a prize each time a winning correlation is encountered. Alternatively, if the winning numbers are pre-selected, it is possible to assign a prize to that number upon generation of same. As a third alternative, the prizes can be awarded in a pre-selected order, thereby ensuring that, for example, the "grand" prize is awarded at an appropriate time during the sweepstakes. Whichever alternative is selected, it is essential to program the sweepstakes processor to include a sweepstakes account, which keeps track of each prize so that only a predetermined number of prizes are awarded. The sweepstakes account can be programmed to track both cash awards and material awards.

It is envisioned that if cash awards are given, the operator of the sweepstakes may elect to instantaneously credit the winner's financial institution account, or if the ATM is being utilized, to immediately deliver the cash prize to the user at the ATM. If the award is not given immediately at the ATM, the transaction receipt is printed to indicate the award to the user.

When the game apparatus is used in conjunction with a network system, it is possible to arrange the components such that each financial institution is in control of its own separate sweepstakes-type game. It is also envisioned that a network-wide sweepstakes-type game could be conducted.

In areas where lottery games are permitted, the apparatus is designed to be utilized as a lottery machine. The components are substantially similar, although the user would be required to pay consideration for the change to enter the lottery sweepstakes. Preferably, a separate function key would be provided on the ATM or POS terminal whereby the user could designate an amount of money to be withdrawn from the user's financial institution account and applied toward the lottery. This separate sweepstakes key could also be used on the standard sweepstakes-type game to increase user awareness. The sweepstakes computer is then programmed to accommodate either an instantaneous lottery determination or to enter the user's account number or other user indicia into a longer term lottery, as is well known in the art.

An alternative participation system is provided for non-account holders to participate in the game. In certain states, the charges associated with using a debit card could be considered to constitute a lottery-type situation. In that event, an alternate non-customer access means is provided whereby the presumption of consideration is defeated, so long as no charge is made for the alternative participation means. For example, a special sweepstakes card can be produced, which allows access only to the sweepstakes processor. Alternatively, the non-customer can be allowed to participate by requesting a playing card having special game indicia thereon for game play.

Additionally, other remote interface devices such as telephones, personal computers and electronic cash registers (ECR) are utilized for financial transactions, whereby the user has more flexibility in location when contacting the financial services-type institution.

In states where lottery games are legal, the financial institution can modify its sweepstakes processor to purchase electronically lottery chances, or tickets, for the user, and give the ticket as a prize for periodic use of the remote interface device. Appropriate security measures, including a "buffer" lottery-type game financial account, will be necessary to ensure the integrity of the state-sponsored lottery. The present invention also provides confirmation means, such as an assigned confirmation number, which is given to the user and stored by the lottery computer, for further security.

In another embodiment of the present invention, the remote interface device (e.g. ATM, POS device, ECR or analogous devices such as a telephone or personal computer in electronic communication with the financial services-type institution) is used to effect the purchase of a lottery ticket. Again, the lottery computer preferably issues a set of confirmation numbers and records them in addition to relaying them to the sweepstakes processor and the user, for security and fraud-prevention purposes.

Whether the lottery chance is awarded to, or purchased by, the user, money is transferred electronically from the financial institution to a lottery account. If a user-purchase is involved, the user's financial account is instantaneously debited. However, the money may be transferred to an account controlled by the financial services-type institution and held for periodic transfer to the lottery account on a daily or weekly basis. The same is true if the lottery ticket is given as a prize; the money is periodically batch transferred to the lottery account.

The drawings constitute a part of this specification and include exemplary embodiments of the present invention and illustrate various objects and features thereof.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a simplified block diagram of the principal components employed for practicing an automated sweepstakes game according to the present invention, and showing an automated teller machine.

FIG. 2 is a view similar to FIG. 1 and illustrates a point-of-sale terminal in lieu of an automated teller machine.

FIG. 3 is a simplified block diagram of the principal components of the automated sweepstakes game further showing a network system.

FIG. 4 is a view similar to FIG. 3 showing a first alternative arrangement of the principal components and network system.

FIG. 5 is a view similar to FIG. 3 showing a second alternative arrangement of the principal components and network system. FIG. 6 is a view similar to FIG. 3 showing a third alternative arrangement of the principal components and network system.

FIG. 7 is a flow chart representing the principal steps employed in practicing the automated sweepstakes game.

FIG. 8 is a simplified block diagram of the principal components employed in the instant invention and showing a generic remote interface device.

FIG. 9 is a simplified block diagram of the present invention and showing additional components utilized to award a lottery chance as a prize.

FIG. 10 is a simplified block diagram of an alternative embodiment showing the principal components necessary to allow a user to purchase a lottery ticket electronically.

DETAILED DESCRIPTION OF THE INVENTION

As required, detailed embodiments of the present invention are disclosed herein; however, it is to be understood that the disclosed embodiments are merely exemplary of the invention which may be embodied in various forms. Therefore, specific structural and functional details disclosed herein are not to be interpreted as limiting, but merely as a basis for the claims and as a representative basis for teaching one skilled in the art to variously employ the present invention in virtually any appropriately detailed structure.

Referring to the drawings in more detail, the reference numeral 1 generally indicates an automated sweepstakes game apparatus. An interface device, for example, an automated remote computer terminal such as an automated teller machine (ATM) 2, electronically communicates with a subject financial institution data processor or computer 4. A sweepstakes processor or computer 5 is in electronic communication with the subject financial institution computer 4 and the ATM 2. Typically, a user or player (not shown) gains access to the ATM 2 by inserting an identification card (not shown) and in addition (or instead of), by entering a personal identification number (PIN) 7.

Processor means such as the sweepstakes processor 5 reads a user indicia (not shown) such as a user's financial institution account number. The sweepstakes processor 5 generates a game indicia, such as a random prize number (not shown), and compares the user indicia and game indicia to determine whether a selected winning correlation exists between them.

The sweepstakes processor 5 relays the correlation information to the ATM and a printed receipt is given to the user, which indicates the absence or presence of the winning correlation. If a winning correlation exists, the sweepstakes processor 5 determines a prize (not shown) to be awarded a user as well as a manner of awarding the prize to the user.

As shown in FIG. 2, the remote computer terminal may be what is commonly known as a point-of-sale (POS) terminal 12 of the type located in a retail establishment for direct debiting of a user's financial institution account. The ATM 2 and POS terminal 12 are analogous machines, although not interchangeable. The functions of these machines are well known in the art and they will be discussed together, except where significant differences between them affect the present invention. Thus, in FIGS. 3 through 6, the POS terminal 12 could be substituted for the ATM 2. Furthermore, it is noted that a plurality of such ATM's 2 and POS terminals 12 are generally associated with a subject financial institution computer 4.

Typically, the user is provided a debit card (not shown) having a magnetically encoded stripe thereon. The debit card is adapted to be inserted into the ATM 2 and identifies the user to the subject financial institution computer 4. The PIN 7 is also used as an identification means for further validating the user's access to the subject financial computer 4. The user has an account

number with the subject financial institution 4 that is specific to the user, and preferably comprises the user indicia for the present invention.

It is envisioned that the type of card known as a bank credit card could be used in lieu of the debit card, with no effect on the present invention. Further, the user indicia, in addition to comprising the user's financial institution account number (such as a checking account number), the user indicia could take the form of a number specifically assigned to the debit or credit card. It is also envisioned that the user indicia can comprise the transaction number or other number that identifies the user sufficiently to properly credit the user should he or she win the sweepstakes.

The user indicia, such as the financial institution account number, typically comprises approximately 10 digits, although the identifier can comprise alphanumeric characters. In any event, the sweepstakes processor 5 generates the game indicia such that the game indicia generally corresponds to the format of the user indicia. That is, if the user indicia comprises an account number having ten digits, the game indicia generated by the sweepstakes processor 5 would typically have ten digits.

FIGS. 3 through 6 disclose alternative configurations of the present invention, which configurations include a network of financial institutions 15 and a transmission facilities device, such as a switch 16. As illustrated in FIG. 3, the switch 16 receives an electronic communication from the ATM 2 and routes the financial institution instructions to the subject financial institution computer 4. The sweepstakes information, i.e. the user indicia, is routed to the sweepstakes processor 5 for comparison to a game indicia. As illustrated in FIG. 4, the financial institution information and the user indicia are routed to the subject financial institution computer 4. The user indicia is then routed to the sweepstakes computer 5 for further activity.

Upon completion of the data processing associated with the present invention, the information is relayed back to the switch 16. The results are routed by the switch 16 to the ATM 2 and the subject financial institution 4 for notification of the user, as seen in FIG. 3. As illustrated in FIG. 4, the results are first routed to the subject financial institution 4 and subsequently to the switch 16 for routing to the ATM 2.

As shown in FIGS. 5 and 6, the subject financial institution may place what is commonly known as an intercept computer 24 between the ATMs 2 associated with the financial institution and the switch 16. This positioning of the intercept computer 24 is commonly known as operating "in front of the switch", whereas the configurations disclosed in FIGS. 3 and 4 are known as operating "behind the switch". The intercept computer 24 "intercepts" communications from its associated ATMs 2 which are specific to the subject financial institution, while routing communications related to other network financial institutions 15 through the switch 16.

As shown in FIG. 5, the sweepstakes processor 5 is in direct communication with the intercept computer 24 and receives the user indicia information from the ATM 2 through the intercept computer 24 without routing to the switch 16.

As illustrated in FIG. 6, the sweepstakes processor 5 is in communication with the switch 16. Accordingly, user indicia relating to a customer of the subject financial institution is routed through the intercept computer

24 and switch 16 to the sweepstakes processor 5 and back again.

It is envisioned that the present invention can take a plurality of different configurations. As discussed in the Background of the Invention, the number of institutions comprising the network financial institutions 15 is very large. At present, network systems comprising in excess of 400 financial institution members are known, which together utilize in excess of a thousand automated teller machines.

The sweepstakes processor 5 as illustrated in FIGS. 3 through 6 can accommodate a number of different sweepstake alternatives. For example, the sweepstakes processor 5 can be adapted to accommodate an individual sweepstakes configuration for the subject financial institution alone. Alternatively, the sweepstakes processor 5 can be adapted to allow any user of any of the ATMs 2 in communication with the network of financial institutions 15 to participate in a single collective sweepstakes. It is further envisioned that a sweepstakes processor 5 could accommodate a plurality of individual financial institution sweepstakes.

A preferred method of playing the sweepstakes-type game is disclosed in the flow chart of FIG. 7. Step 31 requires the insertion of an identification card, such as the previously described debit card in to an ATM 2. Alternatively, the user may insert the debit card or the like into a POS terminal 12, as shown at step 32. In either event, the debit card begins the activation process and identifies the proposed user to the system. At step 33, the financial institution computer requires that the PIN 7 be entered on a keyboard (not shown) of the ATM 2 or POS terminal 12. The financial institution computer receives the information directly, or through the switch 16, as the case may be, and validates the PIN 7, provided the PIN 7 is in fact valid, as shown at step 35. Once validated, the user has access to his financial institution account and proceeds to conduct his financial institution transactions at step 36. As the user transacts his affairs with the financial institution at step 36, the sweepstakes computer reads the user's account number at step 40.

When the user has completed his transactions with the financial institution, at step 37 the card is returned to the user. At step 38, the financial transactions are completed (such as the delivery of withdrawn money) and the printing of a receipt. The receipt is delivered to the user at step 39. Alternatively, the card can be returned to the user following delivery of the receipt at step 39.

The account number is sent to the sweepstakes computer at step 41. The sweepstakes computer 5 generates, or has previously generated, a prize number or numbers as shown at step 42. The account number is compared to the prize number at step 45. The numbers are compared to determine whether a predetermined winning correlation exists between the numbers, that is whether they match. If no match exists, the game branches to step 38, and the negative results are printed on a receipt which is delivered to the user at step 39.

If the account and prize numbers match at step 45, the game branches to step 48, which determines the prize to be awarded to the user. The manner of awarding the prizes is determined at step 49. Steps 48 and 49 are discussed in greater detail below. From step 49, the game is directed to step 38 where the receipt is printed with the winning information, including the prize and manner of awarding same, and the receipt is delivered at step 39.

It is envisioned that numerous variations of the playing game method can be accommodated by the present invention. For example, the user indicia can be any appropriate number that is specific to the user, and it is not required that the user be a customer of the financial institution. In order to accommodate certain existing laws concerning lotteries, it is possible that non-customers would be allowed to enter the game.

The prize number generated at step 42 can be generated randomly prior to step 40, such that a winning prize number is determined periodically, as at the start of a business day or week. Alternatively, the prize number can be determined each time the game is played.

When a switch 16 is employed, with a collective sweepstakes among the network of financial institutions, a plurality of winning prize numbers can be generated and stored in the sweepstakes computer 5 to ensure that the prizes are distributed in an equitable manner. It is also envisioned that the prize to be awarded can be assigned to a pre-selected prize number, thus reducing the amount of computer time involved with each playing of the game.

The sweepstakes processor 5 has a prize account which records prizes as they are awarded and ensures that each prize is awarded only once. If the prize is to be cash, the prize account must have a cash balance therein which can be depleted as the prizes are awarded.

In awarding the cash prizes, the cash may be given out from the ATM at step 38, or simply credited to the user's financial institution account for later withdrawal. In the event the prize is a material good or service, an appropriate manner of awarding same is determined at step 49, such as instructing the user to go to his or her financial institution to receive the prize. The game may be played such that each participant receives some of prize, such as a disconnect coupon for use at a local store.

In addition to notifying the user of the results of the sweepstakes by means of a printed receipt, it is also envisioned that the ATM 2 can be programmed to visually or vocally notify the user. That is, a special subroutine program could be provided to graphically demonstrate the results on the ATM display screen, or to program a voice transmitter to so notify the user.

Present federal income tax laws require that a federal income tax withholding be effected on sweepstakes or gambling winnings in excess of \$600. Thus, the sweepstakes processor 5 can be programmed to calculate and deduct the amount of such withholdings before awarding a cash prize.

ALTERNATIVE EMBODIMENTS

FIGS. 8 through 10 illustrate additional related embodiments of the Automated Marketing and Gaming Systems. Specifically, FIG. 8 discloses a configuration generally analogous to the diagrams shown in FIGS. 1 and 2. The reference numeral 101 generally indicates an automated marketing and gaming system apparatus associated with a financial services-type institution.

A remote interface device 102 is in communication with a subject financial institution computer 104 having processor means, such as a sweepstakes processor 105. A validation block 107 is shown between the remote interface device 102 and the subject financial institution computer 104. The validation block 107 represents a step of identifying a user to the subject financial institution computer 104 and validating the user's access to his or her financial account at the subject financial institu-

tion. For example, a personal identification number (PIN) may be assigned to the user, which constitutes use identification means.

Means are provided for generating user indicia specific to the user and game indicia. The user indicia is passively generated without input from the user once access to the remote interface device 102 has been obtained.

The processor means, specifically the sweepstakes processor 105, communicates with the remote interface device 102 and receives the user indicia and game indicia (or generates either or both). The sweepstakes processor 105 compares the user indicia to the game indicia and determines whether a programmed winning correlation exists between them. Generally, the comparison of the user and game indicia is completed contemporaneously with the user effecting an unrelated financial transaction via the remote interface device 102. Thus, there is little or no appreciable extra time required to complete the game in addition to the time required for the unrelated financial transaction. The results of the comparison are then transmitted back to the remote interface device 102 and the user is notified of the results by an appropriate means.

The remote interface device 102 is of the type used by a financial services-type institution. In addition to the ATM and POS devices previously discussed, the term "remote interface device 102" contemplates a telephone or personal computer interface with the financial services-type institution. Components such as telephones and personal computers are essentially POS devices when used for banking purposes.

Various financial services-type institutions presently offer off-site transaction alternatives in addition to ATM and POS devices. Among these are banking by telephone and through personal computers. The present automated marketing and gaming system can be incorporated into such alternatives to encourage more financial services-type institution customers to utilize the services, thus making them more cost effective.

Telephone-based financial transactions rely on telephones that produce tone signals corresponding to numbers and other symbols on standard telephone sets. To initiate a telephone financial transaction, the user calls a telephone number that is associated with a subject financial institution computer 104, which has means for telephonic (electronic) communication with remote phone devices. Validation and identification are achieved by the user entering a PIN or the like by pushing appropriate buttons on the telephone; which buttons produce electronic signals that are received by the financial institution computer 104. Once access to the user's financial account is established, the financial transaction proceeds, with instructions to the subject financial institution computer 104 being provided by the user pressing signal buttons, in a manner that is well-known in the art.

Generally contemporaneously with the user effecting the financial transaction, the sweepstakes processor 105 plays the automated sweepstakes-type game using indicia specific to the user as described for the initial embodiments. If desired, the user can be notified of the results of the sweepstakes at the end of his or her financial transaction. If a winning correlation exists, the user can be informed of the prize and details concerning the manner of awarding it, be it through a credit given to the financial account or through a physical claiming

procedure. For security purposes a written confirmation can be mailed to the user.

The personal computer alternative is similar to the telephone sweepstakes, but with a different remote interface device 102. A personal computer can be utilized for home banking, with electronic phone communication effected through modems and the like, as is well-known in the art. A keyboard and screen associated with a standard personal computer provide the direct interface between the user and the subject financial institution computer 104. Identification and validation procedures are followed, and the user can effect various financial transactions, including directing payment of bills, transferring funds, and the like. The present invention is again used as an inducement to utilize the remote services, as with telephone banking. The automated sweepstakes-type game is played generally contemporaneously with the user effecting unrelated financial transactions. Results of the sweepstakes can be displayed on the user's screen, and if available, printed out by the user.

FIG. 9 illustrates a specific manner and type of a sweepstakes prize. The remote interface device 102, validation 107, and subject financial institution computer 104 are provided as discussed above. In this illustration, a lottery chance, or ticket, is given to the user of the remote interface device 102 as an incentive to use such device. To accomplish this, the sweepstakes processor 105, instead of conducting the usual game, is utilized to effect the purchase of a lottery chance from a government, especially a state, lottery institution.

An institution-controlled financial account 109, a lottery-type game account 111, and a state lottery computer 113 are shown schematically in FIG. 9. The institution-controlled financial account 109 is maintained as a monetary fund controlled by the financial services-type institution. Money is deposited in the financial account 102 by the financial services-type institution for use in purchasing lottery chances. The sweepstakes processor 105 accesses the financial account 109 when a user utilizes the remote interface device 102 for a financial transaction. The sweepstakes processor 105 directs an electronic funds transfer (EFT) from the financial account 109 to the game account 111, whereby a lottery chance is purchased for the benefit of the user.

The game account 111 is maintained by the state lottery computer 113 and is provided as a security buffer between the state lottery computer 113 and the financial account 109. The sweepstakes processor 105 directs the electronic transfer of funds from the financial account 109 to the game account 111 in exchange for a lottery ticket. The transactions are recorded by both the sweepstakes processor 105 and the state lottery computer 113, with the financial account 109 and game account 111 being conduits for the transfer of money.

Although specific information regarding the user will be recorded with each transaction, the actual transfer of funds will typically occur on a periodic basis, such as daily or weekly. Thus, means are included for tracking the purchase of individual lottery chances, including: issuance and recording of a verification number by the state lottery computer 113, recording of such verification number by the sweepstakes processor 105, and notifying the user of the purchase on his or her account. It is envisioned that the lottery chance could be an instant-type game, or a lotto-type game (which would require substantially more record keeping). The sweepstakes processor 105 also records the frequency of use

by the user and is programmed to limit the awarding of lottery chances to one per day, week, or the like. Thus, the user is given an inducement to use the remote interface device 102 through a passive, contemporaneous and random automated sweepstakes-type game.

Another modification is disclosed in FIG. 10, wherein reference numeral 117 indicates a user's financial account. In this embodiment, the remote interface device 102, which again is an ATM, POS device, telephone, personal computer, or the like, is utilized to purchase a lottery chance, or ticket.

The remote interface device 102 is used to access the subject financial institution computer 104, and commands are given by the user regarding the desire to buy one or more lottery tickets (instant, lotto-type, or the like). In order to keep this transaction generally separate from other financial services-type institution transactions, the sweepstakes processor 105 controls the purchase steps. The user, having properly obtained access to the subject financial institution computer 104, chooses the type of lottery game he or she wants to enter and designates an amount of money to be transferred for this purpose. If a lotto-type game is chosen, numbers must be selected by the user or, alternatively, the sweepstakes processor 105 can be instructed to randomly generate numbers.

The sweepstakes processor 105 subsequently accesses the user's financial account 117 and transfers funds from it to the lottery-type game account 111. Alternatively, the funds transfer may be to a financial services-type institution holding account, which accumulates funds from multiple users and periodically batch transfers same to the lottery-type game account 111. Meanwhile, the user's information regarding lottery choice is entered and stored in the state lottery computer 113. Confirmation, e.g. by means of a confirmation number, is then issued by the state lottery computer 113 and relayed to the user via the sweepstakes processor 105. If desired, this confirmation can be stored in the sweepstakes processor 105 and a printed receipt can be given to the user. In the event the user wins the lottery, the user's financial account 117 may automatically be credited with the proceeds, less any required tax withholding.

The crediting of the user's financial account 117 can be accomplished by various means. For example, the sweepstakes processor 105, upon a determination that a winning lottery ticket has been purchased by or for the user, can notify the state lottery computer 113 and request payment from the lottery-type game account. Once the winning correlation is confirmed, the proceeds are electronically transferred to the subject financial institution computer 104 for crediting to the user's financial account 117. Another example is for the winning correlation to be confirmed automatically and the proceeds credited directly to the user's financial account 117 from the state lottery computer.

It is to be understood that while certain forms of the present invention have been illustrated and described herein, it is not to be limited to the specific forms or arrangement of parts described and shown.

What is claimed and desired to be secured by Letters Patent is as follows:

1. Apparatus for participation of a user in a sweepstakes-type game, said apparatus comprising:

(a) a telephone device for allowing electronic communication between the user and a financial services-type institution;

- (b) user identification means for providing user access to said financial services-type institution;
 - (c) means generating user indicia specific to the user; said user indicia being passively generated without input from said user once said user has obtained access to said financial services-type institution;
 - (d) means generating game indicia; and
 - (e) processor means associated with said financial services-type institution and communicating with said telephone device, receiving said user indicia, and receiving said game indicia; said processor means including means for comparing said user indicia to said game indicia and determining whether a selected winning correlation exists between same, said processor means including means for completing the comparison of said user game indicia generally contemporaneously with the user effecting an unrelated transaction by means of said telephone device, whereby there is no appreciable extra time required to complete said game in addition to said unrelated transaction.
2. Apparatus for participation of a user in a sweepstakes-type game, said apparatus comprising:
- (a) a personal computer for electronic communication between a user and a financial services-type institution;
 - (b) user identification means for providing user access to said financial services-type institution;
 - (c) means generating user indicia specific to the user; said user indicia being passively generated without input from said user once said user has obtained access to said financial services-type institution;
 - (d) means generating game indicia; and
 - (e) processor means associated with said financial services-type institution and communicating with said personal computer, receiving said user indicia, and receiving said game indicia; said processor means including means for comparing said user indicia to said game indicia and determining whether a selected winning correlation exists between same, said processor means including means for completing the comparison of said user game indicia generally contemporaneously with the user effecting an unrelated transaction by means of said personal computer, whereby there is no appreciable extra time required to complete said game in addition to said unrelated transaction.
3. Apparatus for playing a sweepstakes-type game by a user, said apparatus comprising:
- (a) a plurality of remote interface devices; each of said remote interface devices being in electronic communication with a financial institution data processing machine; each of said remote interface devices being one of an automated teller machine, a point-of-sale terminal, telephone device, electronic cash register or personal computer of the type used in financial transactions with a financial services-type institution;
 - (b) user identification means identifying a financial account associated with a user at said financial institution; each of said remote interface devices including means for allowing said user to access electronically the financial institution account of said user;
 - (c) a sweepstakes data processor having means for passively reading an account number associated with said user's financial account without input from the user and means for generating a random

- number and comparing said account number to said random number while the user effects a transaction at said remote interface device, said comparing of said account number and said random number being effected to determine whether said account number and random number match, whereby there is no appreciable additional time required to complete said game in addition to said transaction; and
 - (d) said sweepstakes data processor including means for determining a prize to be awarded to the user of an account number determined to match said random number and awarding said prize to the user.
4. The apparatus as set forth in claim 3 wherein:
- (a) said sweepstakes data processor includes means for awarding said prize to the user by transferring prize funds to said user's financial account and notifying the user through one of said remote interface devices of the prize and transfer of prize funds.
5. The apparatus as set forth in claim 3 wherein:
- (a) said sweepstakes data processor includes means for awarding said prize by dispensing prize funds at one of said remote interface devices when said one remote interface device is one of said automated teller machines or point-of-sale devices.
6. A method of playing a sweepstakes-type game including the steps of:
- (a) entering a user identifier into a remote interface device; said interface device being one of an automated teller machine, a point-of-sale terminal, a telephone, an electronic cash register or a personal computer of the type used by a financial services-type institution;
 - (b) accessing a financial account at a financial services-type institution electronically through the interface device upon entry of said user identifier;
 - (c) passively assigning user indicia specific to said user without prompting from said user;
 - (d) selecting a random game indicia;
 - (e) reading said user indicia and said game indicia;
 - (f) comparing said user indicia to said game indicia;
 - (g) determining whether a winning correlation exists between said game indicia and said user indicia;
 - (h) awarding a selected prize to said user upon determining that said selected winning correlation exists;
 - (i) notifying said user of whether a selected winning correlation exists at generally the same time that said user completes an unrelated transaction with the financial institution; and
 - (j) awarding said prize to the user by contemporaneously crediting said user's financial account at said financial services-type institution.
7. Apparatus for promoting the use of remote interface devices for making financial transactions, said apparatus comprising:
- (a) a remote interface device of the type provided by financial services-type institutions for effecting financial transactions between at least one of said institutions and a user;
 - (b) said interface device being one selected from the group consisting of a telephone, a point-of-sale device, an automatic teller machine, an electronic cash register and a personal computer;
 - (c) user identification means providing user access through said interface device to said institution;
 - (d) means providing a financial account under the control of the institution, said financial account

- being funded for promoting the frequent use of said interface device;
- (e) means for providing a lottery-type game account adapted to electronically receive funds paid for lottery chances; 5
- (f) means communicating with said interface device and adapted to electronically effect the transfer of funds out of said institution-controlled financial account and into said lottery-type game account, said electronic transfer to said lottery-type game account occurring without input by said user other than said user effecting at least one separate financial transaction with said institution through operation of said interface device; and (g) further means communicating with said interface device and adapted to notify said user that a lottery chance has been purchased by said institution on behalf of said user. 10
8. The apparatus as set forth in claim 7 wherein:
- (a) said further means communicating with said interface device includes means for providing said user with printed evidence of said lottery chance. 20
9. The apparatus as set forth in claim 7 wherein:
- (a) said means effecting the electronic transfer into said lottery-type game account includes means for causing the transfer contemporaneously with said separate financial transaction. 25
10. The apparatus as set forth in claim 7 wherein:
- (a) said means effecting the electronic transfer into said lottery-type game account includes means for causing the transfer non-contemporaneously with said separate financial transaction. 30
11. The apparatus as set forth in claim 7 wherein:
- (a) said means effecting the electronic transfer into said lottery-type game account includes means for storing information relating to the number of lottery chances purchased on behalf of remote interface device users and means for subsequently electronically batch transferring corresponding funds into said lottery-type game account. 35
12. The apparatus as set forth in claim 7 further including:
- (a) means for notifying said lottery-type game account that said lottery chance purchased on behalf of the user is a winning lottery chance and effecting the transfer of winning proceeds from said lottery-type game account to said institution-controlled financial account for distribution to the user. 40
13. The apparatus as set forth in claim 7 further including:
- (a) means for automatically confirming the existence of a winning correlation and crediting the user's financial account with lottery proceeds from said lottery-type game account. 50
14. The apparatus as set forth in claim 7 wherein:
- (a) said means communicating with said interface device includes means for storing user identification indicia obtained from said user identification means and means for comparing said indicia with identification indicia obtained from a later user; 60
- (b) said means communicating with said interface device having means operative to block the purchase of a lottery chance on behalf of the later user upon finding a match between said respective indicia; and 65
- (c) including means for preventing a particular user from repeatedly obtaining lottery chances purchased by said institution.

15. Apparatus for marketing lottery chances comprising:
- (a) a remote interface device of the type provided by financial services-type institutions for effecting financial transactions between at least one of said institutions and a user;
- (b) said interface device being one selected from the group consisting of a telephone, a point of sale device, an automatic teller machine, an electronic cash register and a personal computer;
- (c) user identification means providing user access through said interface device to one of said institutions;
- (d) means providing a financial account under the control of the user;
- (e) means providing a lottery-type game account for electronically receiving funds thereinto;
- (f) means communicating with said interface device and including means for electronically effecting the transfer of funds out of said financial account and into said lottery-type game account; and
- (g) further means communicating with said interface device for notifying said user that a lottery chance has been purchased by said user.
16. The apparatus as set forth in claim 15 wherein:
- (a) said further means communicating with said interface device includes means for providing said user with printed evidence of said lottery chance.
17. The apparatus as set forth in claim 15 wherein:
- (a) said means effecting the electronic transfer into said lottery-type game account is adapted to store information relating to the number of lottery chances purchased on behalf of remote interface device users in a lottery player information repository and subsequently electronically batch transfer corresponding funds into said lottery-type game account.
18. Apparatus for distributing lottery chances comprising:
- (a) a remote interface device of the type provided by financial services-type institutions for effecting financial transactions between at least one of said institutions and a user;
- (b) said interface device being one selected from the group consisting of a telephone, a point of sale device, an automatic teller machine, an electronic cash register and a personal computer;
- (c) user identification means providing user access through said interface device to one of said institutions;
- (d) means providing a financial account under the control of the user;
- (e) means providing a lottery-type game account including means for electronically receiving funds thereinto;
- (f) means providing a lottery player information repository;
- (g) means communicating with said interface device and including means for receiving and recording in said repository a set of lottery numbers assigned to the user and means for electronically effecting the transfer of funds out of said financial account and into said lottery-type game account; and
- (h) further means communicating with said interface device and including means for notifying said user that a lottery chance associated with said lottery numbers has been issued.
19. The apparatus as set forth in claim 18 wherein:

(a) said further means communicating with said interface device including means for providing said user with a printed lottery ticket bearing said lottery numbers.

20. A method for promoting the use of remote interface devices for making financial transactions including the steps of:

- (a) entering a user identifier into a remote interface device for effecting financial transactions between a user and a financial services-type institution; one of said remote interface devices being one selected from the group consisting of a telephone, a point-of-sale device, an automated teller machine, an electronic cash register and a personal computer;
- (b) accessing a user's financial account at said financial services-type institution electronically through said remote interface device upon entry of said user identifier;
- (c) providing an institution-controlled financial account funded for promoting the use of said remote interface device;
- (d) providing a lottery-type game account for electronically receiving funds paid for lottery chances; and
- (e) electronically transferring funds from said institution-controlled financial account to said lottery-type game account for periodically purchasing a lottery chance for the user without input therefrom upon the user effecting a financial transaction with said financial services-type institution through operation of said remote interface device.

21. The method as set forth in claim 20 further including the step of:

- (a) notifying the user that a lottery chance has been purchased by said financial services-type institution on behalf of said user.

22. A method of marketing lottery chances including the steps of:

- (a) entering a user identifier into a remote interface device for effecting financial transactions between a user and a financial services-type institution; said remote interface device being one selected from the group consisting of a telephone, a point-of-sale device, an automated teller machine, an electronic cash register and a personal computer;
- (b) accessing a user's financial account at said financial services-type institution electronically through said remote interface device upon entry of said user identifier;
- (c) providing a lottery-type game account for electronically receiving funds paid for lottery chances;
- (d) transferring electronically funds from said user's financial account to said lottery-type game account to purchase a lottery chance upon instructions from said user by means of said remote interface device; and
- (e) notifying said user that a lottery chance has been purchased by said user.

23. The method as set forth in claim 22 further including the steps of:

- (a) determining whether the user's lottery chance is a winning ticket;
- (b) notifying said lottery-type game account of the existence of a winning ticket;
- (c) requesting transfer of winning proceeds of the winning ticket from said lottery-type game account to said financial services-type institution;

(d) crediting the user's financial account at said financial services-type institution with said winning proceeds; and

(e) notifying the user of the existence of said winning ticket and the crediting of the user's financial account.

24. The method as set forth in claim 22 further including the steps of:

- (a) automatically confirming the existence of a winning lottery ticket; and
- (b) automatically crediting the user's financial account with proceeds from the winning lottery ticket.

25. A method of stimulating the use of remote interface devices by playing a sweepstakes-type game including the steps of:

- (a) generating prize winning indicia;
- (b) entering a user identifier into a remote interface device; said interface device being one of an automated teller machine, a point-of-sale terminal, a telephone, an electronic cash register or a personal computer of the type used in conducting transactions with a financial services-type institution;
- (c) accessing a financial account in said financial services-type institution electronically through the interface device upon entry of said user identifier;
- (d) passively generating indicia for the user;
- (e) comparing said passively generated indicia to said prize indicia; and
- (f) determining whether a winning correlation exists between said passively generated indicia and said prize indicia at generally the same time that said user conducts an unrelated transaction with said financial services-type institution.

26. The method as set forth in claim 25, including the step of:

- (a) awarding as a prize one of cash, a credit to said financial account, a discount coupon or instructions for redeeming a material good or service.

27. Apparatus for playing a sweepstakes-type game comprising:

- (a) a plurality of remote interface devices; each of said remote interface devices being capable of electronic communication with a financial services-type institution data processing machine; each of said remote interface devices being one of an automated teller machine, a point-of-sale terminal, a telephone, electronic cash register or personal computer of the type used in conducting transactions with said financial services-type institution;
- (b) user identification means identifying a financial account associated with a user at said financial services-type institution; each of said remote interface devices including means for allowing said user to electronically access the financial services-type institution account of said user;
- (c) means for generating winning prize indicia;
- (d) means for passively generating indicia for the user;
- (e) means for comparing said passively generated indicia to said winning prize indicia approximately while the user effects an unrelated transaction with said financial services-type institution at one of said remote interface devices, said means for comparing being operable to determine whether a winning correlation exists between said prize indicia and said passively generated indicia over an interval

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requiring no appreciable additional time beyond that required to complete said transaction.

28. The apparatus as set forth in claim 27, including:

(a) means for awarding as a prize one of cash, a credit to said financial account, a discount coupon or instructions for redeeming a material good or service.

29. A method of stimulating the use of remote interface devices by playing a sweepstakes-type game including the steps of:

(a) generating prize winning indicia;

(b) entering a user identifier into a remote interface device; said interface device being one of an automated teller machine, a point-of-sale terminal, a telephone, an electronic cash register or a personal

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computer of the type used in conducting transactions with a financial services-type institution;

(c) accessing a financial account in said financial services-type institution electronically through the interface device upon entry of said user identifier;

(d) generating indicia for the user;

(e) comparing said user generated indicia to said prize indicia; and

(f) determining whether a winning correlation exists between said user generated indicia and said prize indicia contemporaneously with the user effecting an unrelated financial transaction via said remote interface device.

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(x.) Related Proceedings Appendix

None.